



Intramural Research
NATIONAL INSTITUTES OF HEALTH • 1956

A LIST OF RESEARCH PROJECTS CARRIED ON IN NIH FACILITIES

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE • Public Health Service

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Office of Research Planning-NIH
April 1957

ERRATA SHEET

for

"Intramural Research
National Institutes of Health, 1956"

NATIONAL CANCER INSTITUTE

Page 3. Field Investigations and Demonstrations Branch

Change project numbers: NCI - 055 to NCI - 080
NCI - 056 to NCI - 050

Page 7. Associate Director in Charge of Research

The following projects are added:

Studies on possible cancer hazards related to use of food
dyes (OADR - 202) (E. J. Lethco)

Macromolecular polymers as carcinogenic agents (OADR - 203)
(J. H. Seipel)

Macromolecular polymers as carcinogenic agents: (a) polyvinyl
pyrrolidones; (b) dextrans; (c) other natural & synthetic
polymers (polyvinyl alcohol, polysilicones, silica, methyl
cellulose, ethyl cellulose (OADR - 203-a) (W. C. Hueper)

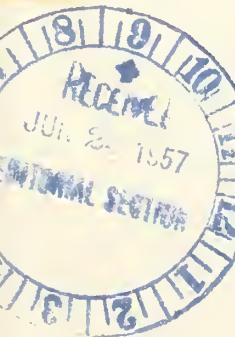
Carcinogenic studies on petroleum substitutes & synthetic
liquid fuels; II Bergius oils and Fischer-Tropsch oils;
III Carcinogenicity of shale oil fractions of low boiling
point and free of 3,4-benzpyrene (OADR - 204) (W. C. Hueper)

Experimental studies in metal cancerigenesis: (a) Uranium;
(b) Chromium, chromite ore, chromite roast; (c) nickel
(OADR - 205) (W. C. Hueper)

Experimental studies in metal cancerigenesis, chromium
(OADR - 205-a) (C. H. Grogan)

Carcinogenic studies on food additives and contaminants:
(a) studies on carcinogenic water pollutants - Carbon
adsorbate from effluents of a coke plant and of an oil
refinery; (b) Carcinogenic studies on aromatic amines &
food dyes, experimental and environmental aspects
(OADR - 206-a & OADR - 202-a) (W. C. Hueper)

Polynuclear aromatic hydrocarbons in oysters (OADR - 206-b)
(H. J. Cahnmann)



Polycyclic aromatic hydrocarbons in roasted coffees and coffee soots (OADR - 206-c) (M. Kuratsune)

Medico-legal and public health activities and considerations on occupational, environmental and traumatic cancers (OADR - 209) (W. C. Hueper)

Studies on occupational and environmental respiratory cancer hazards caused by the inhalation of carbonaceous air pollutants (coal tar, petroleum asphalt, cutting oil, coffee roast soot) (OADR - 210) (W. C. Hueper)

Evaluation of various adsorbents elution methods for the chromatographic fractionation of polynuclear aromatic hydrocarbons (OADR - 211) (H. C. Cahnmann)

Page 8. Laboratory of Biochemistry

The following project is added:

Chromatographic analysis of protein components of serum in health and disease (NCI - 313) (H. A. Sober and E. A. Peterson)

NATIONAL INSTITUTE OF MENTAL HEALTH

Page 62. Child Research Branch

The following project is added:

Interaction patterns of normal and hyperaggressive children (NIMH - CR - 7(C))(A. T. Dittmann, D. W. Goodrich)

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INTRODUCTION

of the list
This list of ~~NIH~~ research projects covers studies *is for* carried on in ~~NIH~~ facilities during calendar year 1956. It has been prepared for the use of individual investigators and persons responsible for the direction of research programs. *with it*

As a guide to research activities, the list can be used to establish relationships and ~~contact~~ among workers in similar or related fields, and to aid in the orientation of new investigators.

For officials responsible for program direction, it provides a directory of research projects and investigator interests, and also a general indication of emphasis by field.

The list includes all
~~This list has been prepared from the Individual Project Reports submitted by investigators as part of the Annual Report of NIH Program Activities. All studies and investigations of scientific character, including studies developed as necessary adjuncts to the evaluation and improvement of operating programs, have been reported.~~

of the list
Additional copies may be obtained from the Office of Research Planning, NIH.

Office of Research Planning
National Institutes of Health

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LIST OF PROJECT TITLES

~~LIST OF PROJECT TITLES*~~

* Numerical references are the project numbers of the reporting organizations.

NATIONAL CANCER INSTITUTE

Biometry Branch

Relationship of mustard gas and influenza among veterans of World War I and later development of lung cancer (NCI-056) (G. W. Beebe and M. B. Shimkin)

Hypo- and Hyperpituitarism and cancer (NCI-057) (P. O. Mustacchi and M. B. Shimkin)

Schistosomiasis and bladder cancer (NCI-058) (P. O. Mustacchi)

Study of mortality and disability retirement due to cancer among railroad workers (NCI-60) (B. Carroll and W. Haenszel)

Survey of smoking patterns in the United States (NCI-61) (W. Haenszel and M. B. Shimkin)

Statistical studies of cancer in Pittsburgh area (NCI-62) (W. Haenszel and A. Ciccio)

Retrospective study on the association of smoking and lung cancer in women (NCI-63) (W. Haenszel and M. B. Shimkin)

Survival data on cancer patients enumerated in morbidity surveys (NCI-64) (W. Haenszel)

Association of smoking history, residence history, and occupation history with lung cancer mortality (NCI-65) (W. Haenszel, I. M. Moriyama, and M. G. Sirken)

Cancer illness in the United States (NCI-66) (S. J. Cutler and H. F. Dorn)

Studies on cancer in Connecticut (NCI-67) (S. J. Cutler and W. M. Haenszel)

Evaluation of end results in the treatment of cancer (NCI-68) (S. J. Cutler and M. B. Shimkin)

Field Investigations and Demonstrations Branch

Epidemiology of cancer of the lung, Pittsburgh field study (NCI-052) (C. D. McClure)

Cancer in a closed population (NCI-053) (A. G. Gilliam, B. K. Milmore, and R. L. Smith)

Epidemiology of leukemia and the lymphomas (NCI-054) (W. A. Walter)

Studies in Geographic and Racial Distribution of Cancer
(NCI-055) (R. L. Smith)

Research in epidemiologic method (NCI-056) (B. K. Milmore
and A. G. Gilliam)

Vaginal cytology as a means of cancer case-finding, Memphis-
Shelby County (NCI-111c) (F. E. Lundin, T. Cruthirds, A. Tegeris)

Clinical trials unit (NCI-112) (A. C. Peacock)

Changes in blood as a method of diagnosis in cancer of human
beings (NCI-113) (J. E. Dunn, Jr.)

Prevalence of gastric achlorhydria in selected population groups.
Evaluation of tubeless gastric analysis as a screening test for
gastric cancer (NCI-114c) (M. L. Sievers)

Survival, incidence and prognosis factors in a selected group of
gastric cancer patients (NCI-115) (M. L. Sievers)

Clinical and environmental study of mothers of children with
malignancy other than hematopoietic (NCI-116c) (M. Manning)

Leukemia occurrence in the New England states (NCI-117)
(M. Manning)

Geographical incidence of cancer of major sites in upstate
New York (NCI-118) (B. Carroll and P. Lawrence)

Cancer mortality in several selected population groups in
New England (NCI-119) (R. Taylor and B. Carroll)

Cancer as a cause of death and disability in railroad workers
(NCI-120) (S. C. Ingraham II, and B. Carroll)

Oral cancer in relation to vitamin deficiency and/or use of
snuff (NCI-121c) (W. R. Vogler)

Industrial exposures, lymphoma and leukemia (NCI-122c) (J. Vander
and M. Manning)

Study of occupational backgrounds of hospitalized cases of lung
and bowel cancer leukemias, and primary malignant tumors of
bone, in males over the age of 25 years. (NCI-123c) (J. W. Egan,
V. E. Archer and M. Erjavec)

Cancer occurrence in uranium miners of the Colorado plateau
(NCI-124c) (J. W. Egan and V. E. Archer)

The incidence of respiratory cancer and other major diseases among World War I veterans in relation to their smoking habits (NCI-125) (H. F. Dorn and W. S. Baum)

Frequency of occurrence of lung cancer among selected occupational groups of civil service personnel (NCI-127) (B. E. Carroll)

Cancer among railroad workers in certain occupations (NCI-128) (P. Lawrence and B. Carroll)

Health survey of personnel employed in baths at Hot Springs, Arkansas (NCI-129c) (P. A. Lawrence and V. Archer)

Survey of cancer mortality in West Virginia (NCI-130) (P. A. Lawrence)

Geographic distribution of respiratory cancer mortality in 15 selected states (NCI-131) (P. Lawrence and K. Beck)

Cancer experience in community population exposed to unusual radon gas concentration (NCI-132) (P. A. Lawrence and B. E. Carroll)

A study of lymphoma cases treated in a selected hospital in New England, including observations on patients and record (NCI-133c) (J. B. Vander)

Cancer incidence in a population of 5000 persons examined periodically (NCI-134c) (J. B. Vander)

Frequency of occurrence of cancer and other major diseases among a group covered by a state-wide unemployment insurance (NCI-135) (J. Vander and H. Dorn)

Cancer incidence in selected population groups in Alabama (NCI-136) (P. A. Lawrence)

Etiology of lung, laryngeal and bladder cancer in New Orleans, Louisiana (NCI-137) (P. A. Lawrence and S. C. Ingraham II)

Study of etiologic factors in mothers of children with lymphomata (excluding leukemia) (NCI-139c) (M. Manning)

Electrophoresis and fluorescence of white blood cells as a possible leukemia diagnostic or screening test (NCI-140c) (J. B. Vander)

Cancer of breast as related to lactation, pregnancies and hormone therapy (NCI-141c) (J. B. Vander)

Evaluation of death certificate reliability as source of environmental cancer information (NCI-142) (J. E. Dunn, Jr.)

Relationship of cancer occurrence and socio-economic factors (NCI-143) (J. E. Dunn, Jr.)

Neck tumors in AKR mice following inoculation of newborn mice with AK leukemic supernates (NCI-144) (R. A. Malmgren, A. D. Dulaney)

Liver mitotic stimulant present in tumor tissue (NCI-145) (R. A. Malmgren)

Geographic and environmental factors in cancer mortality in Washington County Maryland (NCI-146) (P. A. Lawrence, H. Greenville)

Vaginal and cervical cytology as a means of cancer case-finding (NC-147c) (E. von Haam, E. Miller, R. F. Kaiser)

Possible effects of atomic fall-out as reflected in vital statistics (NC-148) (B. E. Carroll)

Environmental exposure and medical history with emphasis on pregnancy-time of mothers of leukemic children (ages 0-14 yrs.) (NCI-149c) (M. Manning)

Geographic distribution of cancer in the U. S. (NCI-150) (P. A. Lawrence, H. Greenville)

Cervical smear cytology as a means of cancer case-finding, San Diego, Calif. (NCI-151c) (J. E. Dunn, Jr.)

Correlation of thyroid disease and breast cancer (NCI-152c) (J. Vander)

Exfoliative vaginal cytology as a hospital case-finding procedure for the American Indian (NCI-153c) (P. Ortega, N. Burns)

Vaginal cytology as a case-finding method in uterine cancer, Washington, D. C. (NCI-154c) (P. Ortego, D. Chapman, E. Chu)

Study of cytology as a means of uncovering cervical cancer on a mass basis (NCI-156) (W. D. Stovall, P. Calabresi, R. F. Kaiser)

Study of vaginal and cervical exfoliative cytology as a method of finding cervical and uterine cancer, Louisville, Kentucky (NCI-157) (J. E. Parker, J. C. Drye)

Study of the cancer experience of non-uranium hard rock miners in the Rocky Mountain area (NCI-163) (M. Erjavec, J. W. Egan, P. A. Lawrence)

Breast self examination: a means for securing earlier diagnosis of breast tumors (NCI-168) (F. R. Kahl)

To further test the finding of an increased risk of leukemia subsequent to infection with chickenpox. (NCI-172) (J. E. Dunn, Jr.)

Exfoliative vaginal cytology as case-finding for uterine cancer applied to federal prisons (NCI-173c) (P. Ortega and N. Burns)

Types of cancer among railroad employees (NCI-174) (P. Lawrence and B. Carroll)

External radiation exposure of uranium miners as related to cancer occurrence (NCI-176) (V. E. Archer and R. D. Coleman)

Irradiation induced tumors in children (NCI-177) (V. E. Archer and C. L. Simpson)

Hypersensitivity and other host tissue factors in cancer of the stomach and large bowel (NCI-178) (J. G. Elchlepp)

Study and analysis of 100 (approx.) cases of polycythemia rubra vera treated with P³² (NCI-179) (P. Calabresi and O. Meyer)

Evaluation of plasma pepsinogen determinations as a screening test for gastric cancer; and study of the values of plasma pepsinogen in selected population group (NCI-180) (M. Sievers)

Spectrophotometric analysis of leukemic white cells (NCI-181) (J. Vander)

Excess lung cancer among Mexican females (NCI-182) (J. E. Dunn, Jr., L. Grinspoon, and P. Lawrence)

Study of non-neoplastic and neoplastic changes in the respiratory mucosa of man, and the external factors which may have a relationship to these changes (NCI-183) (L. Grinspoon and P. Kotin)

Occupation and lung cancer (NCI-184) (J. E. Dunn, Jr.)

Relation of smog to lung cancer (NCI-185) (J. E. Dunn, Jr.)

Cancer mortality among Catholic brothers and sisters in several teaching orders in the United States (NCI-186) (R. Taylor and W. Haenszel)

Associate Director in Charge of Research

Ultraviolet television microscopy (201) (G. Z. Williams)

Pharmacologic actions of bacterial polysaccharides (NCI-Terminating Report) (D. P. Rall)

Research in the chemical and physico-chemical properties of antitumor agents (NCI-1-220c) (T. L. Loo)

Pharmacology of amethopterin (NCI-1-221c) (M. V. Freeman)

Some of the pharmacological properties of tumor tissue (NCI-1-222) (M. V. Freeman)

Penetration of anti-tumor drugs into the central nervous system (NCI-1-223c) (D. P. Rall and C. G. Zubrod)

Pathogenesis of fever in cancer patients (NCI-1-224c) (D. P. Rall)

Research in the pharmacology of antitumor agents related to purine (NCI-1-225c)-a (T. L. Loo)

Studies of the pharmacology of anti-tumor agents (NCI-1-225c) (P. T. Condit, M. V. Freeman, M. Lane, T. L. Loo, D. P. Rall and C. G. Zubrod)

Pharmacology of the folic acid antagonists (NCI-1-226c) (P. T. Condit)

Purine Precursors in E. coli (NCI-1-227) (P. T. Condit)

Tissue culture of human neoplasms (NCI-1-228c) (W. C. Mohler)

Pharmacology of riboflavin analogues (NCI-1-229c) (M. Lane)

Chemotherapy of malignant carcinoid (NCI-1-230c) (P. T. Condit)

Fluorochrome metabolism in normal and tumor bearing animal and man (NCI-1-231c) (D. P. Rall and T. L. Loo)

Pharmacologic actions of bacterial polysaccharides (NCI-232) (D. P. Rall)

A pathological study of diseases in laboratory, domestic and caged wild animals (NCI-215) (W. H. Eyestone)

A study of the naturally occurring diseases of laboratory animals (NCI-216) (R. T. Habermann)

Laboratory of Biochemistry

Spectrophotometric and Micro-, ultramicrochemical analysis
(NCI-302) (R. J. Koegel)

The large scale resolution of amino acids (NCI-306)
(M. Winitz, S. M. Birnbaum, J. P. Greenstein, Wade,
Marshall and Parikh)

Studies on diastereoisomeric α -amino acids and corresponding
 α -hydroxy acids (NCI-307) (M. Winitz, J. P. Greenstein, and
S. M. Birnbaum)

Preparation and evaluation of various cellulose ion-exchangers
for the chromatography of macromolecules (NCI-311) (E. A. Peterson
and H. A. Sober)

Further study on the liver catalase of tumor-bearing animals.
IV. In vivo synthesis of catalase in tumor-bearing animals.
V. Effect of chronic hemorrhage on body weight and on the
activity of liver catalase, cytochrome oxidase, serum aldolase,
and phospho-hexose isomerase. (NCI-320) (R. E. Greenfield and
V. E. Price)

The purification and properties of deoxyribonuclease and
ribonuclease from normal and neoplastic tissues (NCI-322)
(M. E. Maver)

Biological studies of the mechanism of carcinogenesis
(NCI-324) (H. P. Morris)

Mechanism of carcinogenesis: (1) Metabolism of acetylamino-
fluorene and related compounds; (2) The effect of these
carcinogens on the metabolism of amino acids in the host.
(NCI-325) (H. M. Dyer)

Mechanism of carcinogenesis - metabolism of N-2-Fluorenylacetamide
and related compounds (NCI-327) (J. H. Weisburger and E. K.
Weisburger)

Role of iodine and goitrogens in the development and growth of
thyroid tumors in laboratory animals (NCI-328) (H. P. Morris)

Development of unique manometric and electrochemical methods
of measuring gas exchange in cell metabolism (NCI-329)
(D. Burk and G. Hobby)

Combined actions of anti-cancer agents and hormonal systems
that inhibit glucose utilization in cancer metabolism and
growth (NCI-330) (D. Burk and M. Woods)

Subcellular localization of insulin action in carbohydrate metabolism and the growth of tumors (NCI-331) (P. Hochstein)

Effects of steroid hormone balance on growth of transplanted tumors and their hosts (NCI-332) (J. C. Hunter)

Fundamental oxidative and glycolytic metabolism in tumors and tissue cultures (NCI-333) (K. Wight, D. Burk)

The occurrence and function of a stress-modifiable insulin; anti-insulin hormonal complex regulating glucose utilization in cancer metabolism and growth (NCI-334) (M. Woods and D. Burk)

Nutrition (NCI-335) (S. M. Birnbaum, M. Winitz, J. P. Greenstein)

Studies on the metabolism of amino acids and related compounds in vivo (NCI-336) (J. P. Greenstein, M. Winitz, S. M. Birnbaum, J. P. deRusseau, I. Rosenfeld)

Intracellular peptidases (NCI-338) (S. M. Birnbaum, M. Winitz, J. P. Greenstein, R. D. Marshall, W. Paik)

Purification, physical chemical characterization, and homogeneity of proteins of special biochemical or biophysical significance (NCI-339) (E. A. Peterson, H. A. Sober)

Immunochemical characterization of protein components of serum (NCI-340) (H. A. Sober, E. A. Peterson)

Fate of erythrocytes in tumor-bearing animals (NCI-341) (V. E. Price, R. E. Greenfield)

Sex and sex-hormonal factors in N-2-fluorenyldiacetamide carcinogenesis (NCI-344 and NCI-345) (H. P. Morris)

Liver function tests in rats receiving a chemical hepatocarcinogen (NCI-346 and NCI-349) (H. P. Morris)

Role of tryptophan and indole in the induction of bladder tumors in rats ingesting N-2-fluorenylacetamide (NCI-347) (H. P. Morris)

The influence of the thyroid gland in the development of liver cancer in the rat ingesting N-2-fluorenyldiacetamide (NCI-348) (H. P. Morris)

Methods for the synthesis of arginine peptides (NCI-350) (J. P. Greenstein, M. Winitz, L. Zervas)

Studies on ribonucleic acid from normal rat liver and hepatoma (NCI-351) (A. E. Greco)

The separation, purification and characterization of cathepsin from normal and neoplastic tissues (NCI-352) (M. E. Maver)

The characterization of deoxyribonuclease and ribonuclease activities obtained by chromatographic purification from normal and neoplastic tissues (NCI-353) (M. E. Maver)

Studies on the metabolism of the porphyrin ring in tumor-bearing animals (NCI-354) (V. E. Price and R. E. Greenfield)

Laboratory of Biology

Biological studies on the factors involved in the development and growth of tumors in experimental animals (400) (H. B. Andervont)

The relation between cell chemistry and cell structure (401) (E. L. Kuff, G. H. Hogeboom)

Oxidative metabolism in various cellular structures of normal and tumor tissue (404) (R. K. Kielley)

Electron microscopy of normal and malignant cells (406) (A. J. Dalton)

Precursors of deoxyribonucleic acid (DNA) in normal, regenerating, and tumor tissues (407) (W. C. Schneider)

Studies on lymphocytic tumors (408) (E. Shelton)

Studies on liver carcinogenesis in the mouse (409) (E. Shelton)

Transparent chamber and diffusion chamber research (410) (G. H. Algire)

Transparent chamber research (414) (R. M. Merwin)

The mechanism of homograft destruction (416) (J. M. Weaver)

Investigation of the role of genes and their relationship to non-genetic factors in the development of cancer (417) (W. E. Heston)

Host-tumor relationships (418) (M. K. Barrett)

Gastric cancer investigations (419) (M. K. Barrett)

Studies on the Rous sarcoma virus. I. Development of the virus-chicken test-system for general use in basic studies on carcinogenesis (420a) (W. R. Bryan)

Studies on the Rous sarcoma virus. II. Purification and properties of the virus (420b) (J. B. Moloney)

Studies on the Rous sarcoma virus. III. Further studies on the relation of recoverable virus to tumor initiating dose (420c) (W. R. Bryan)

Studies on the Rous sarcoma virus. IV. Investigation of factors capable of modifying host response to the virus (420d) (W. R. Bryan)

Studies on the Rous sarcoma virus. V. Relationship of the virus to other chicken tumor viruses, particularly those of the leukosis complex (420e) (W. R. Bryan)

Studies on the Rous sarcoma virus. VI. Investigations of the effects of bacteria on response to the virus and on growth of the tumors (420f) (D. Calnan)

Genetic studies in mice. A. Tumors in mice. B. Mutations in mice (421) (M. K. Deringer)

Developmental physiology (423) (C. Grobstein)

Studies on the etiology and chemotherapy of experimental lymphomas. A. Etiology and pathogenesis of experimental lymphomas. B. Mechanisms involved in inhibition of leukemic cell growth. (427) (L. W. Law)

A. Leukemogenesis. B. The utilization of a spectrum of reticular neoplasms of the mouse (427a) (M. Potter)

Biochemical mechanisms of resistance to metabolic antagonists in chemotherapy of experimental lymphomas (427b) (B. Shacter)

Studies on biochemical mechanisms of sensitivity and resistance to antimetabolites (427c) (E. P. Anderson)

Genetic and biochemical mechanisms involved in the development of drug-resistance and -dependence in mouse neoplasms (427d) (S. E. Reaume)

A. Etiology and pathogenesis of experimental leukemias B. Chemotherapy of transplantable leukemias (427e) (L. W. Law and D. E. Uphoff)

Genetics of radiation protection by bone marrow injection (427f) (D. E. Uphoff)

Studies of cell nutrition in vitro (428) (V. J. Evans)

Studies of the influence of cell population on proliferation (429) (K. K. Sanford, W. R. Earle, J. C. Bryant)

Studies on the cultivation and function of epithelial and secretory cells (430) (V. J. Evans)

Study on cell transformation in vitro (431) (K. K. Sanford, H. B. Andervont, V. J. Evans)

Comparison microcinematograph (432) (W. R. Earle)

Study on viral agents recovered from mouse neoplasms with reference to their possible role in the following: (a) etiology of mouse leukemia and related tumors, and (b) as they relate to tumors and chemotherapy studies (433) (S. E. Stewart)

Metabolic studies on tissue cells in vitro (434) (B. B. Westfall, W. R. Earle, J. C. Bryant, D. Burk, V. J. Evans, M. W. Woods)

Laboratory of Chemical Pharmacology

Enzyme changes induced in normal and malignant tissues with tumor-necrotizing chemical agents (NCI-250a) (V. S. Waravdekar)

Study of pharmacology of tumor-necrotizing agents (NCI-250b) (M. G. Kelly)

Isolation, synthesis, determination of structure, and determination and correlation of physical-chemical properties of chemical agents useful in damaging animal or human tumors, or in studying the pharmacologic action of such agents (NCI-251) (J. L. Hartwell)

Pharmacologic action of tumor-damaging substances on animal and human malignant cells (NCI-252) (M. Belkin)

Biochemical and pharmacological studies of host-tumor relationship in tumor chemotherapy (NCI-253) (A. Goldin)

The role of polysaccharides in resistance to injurious influences on the host (NCI-261) (M. Landy, M. J. Shear)

Endocrinology Branch

Endocrine aspects of the progression and therapy of cancer of the breast in women and men (NCI-11-800c) (R. Hertz, D. M. Bergenstal, M. C. Li)

Endocrine aspects of cancer of the prostate in man
(NCI-11-801C) (D. M. Bergenstal, R. Hertz and M. C. Li)

Preoperative hormonal therapy of cancer of cervix
(NCI-802C) (R. Hertz, J. H. Waite and R. Smith)

The nature of hormone-producing tumors of pituitary,
adrenal, ovary, testis, pancreas, parathyroid and chorion;
abnormalities of somatic development and growth (NCI-12-803C)
(R. Hertz, D. M. Bergenstal and M. C. Li)

Biotin and the avidin-biotin complex in relation to normal
and neoplastic tissue growth (NCI-11-804C) (R. Hertz,
F. G. Dhyse, and P. Rayford)

Endocrine factors governing hormone-induced tissue growth
and tumor formation in animals; bioassay of blood and
urine from cancer patients (NCI-13-808C) (R. Hertz, W. W.
Tullner, and D. M. Bergenstal)

The preparation of crude natural extracts of hormonal
activity from ovary, testis, adrenal, and pituitary and
their biological and clinical characterization (NCI-12-809C)
(R. Hertz)

General Medicine Branch

Metabolism of nitrogen, calcium, phosphorus and electrolytes
in metastatic prostatic carcinoma (NCI-6-701B C) (D. M.
Watkin)

Measurement of albumin turnover and total exchangeable
albumin in patients with cancer, control patients with
weight loss and volunteer normal subjects (NCI-6-702B C)
(J. L. Steinfeld)

Metabolic study of serum proteins (NCI-6-702 C) (J. L.
Fahey)

Estimation of red cell survival in patients with advanced
neoplastic disease before and after treatment (NCI-6-703 C)
(J. L. Steinfeld, P. Schmidt, E. Chaplin and A. Flick)

The influence of delta-aminolevulinic acid and some of its
analogues on tumor growth (NCI-6-704 C) (D. P. Tschudy)

Study of the value of a skin test using polysaccharide
in cancer and non-malignant disease (NCI-5-706 C) (J. H.
Tuohy and M. Shear)

Evaluation of blood and plasma water content in patients with malignant neoplasms (NCI-5-707 C) (J. H. Tuohy)

A. Relationship of junctional activity in pigmented nevi to development of melanomata. B. Histologic and histochemical anatomy of certain skin lesions, as correlated with gross anatomy. ~~C. Amino acid content~~ and enzymatic activity of skin and mucuous membranes. D. Therapy of mycosis fungoides with high energy electrons. (NCI-7-708 C) (E. J. Van Scott, R. C. MacCardle, R. P. Reinertson and J. R. Andrews)

The chemotherapy of acute leukemia (NCI-4-709 C) (E. Frei, III)

Assay of Compounds for anti-tumor effect by injection into skin metastases. (NCI-5-711 C) (C. O. Brindley)

A. Controlled studies in the chemotherapy of solid tumors. B. Chemotherapeutic agents in human solid tumors (NCI 5-712C) (C. O. Brindley, B. I. Shnider and J. H. Tuohy)

Studies on metabolism of blood cells and blood forming organs (NCI-5-714C) (J. M. Stengle)

The mechanism and management of the hemorrhagic disorder associated with acute leukemia (NCI-4-715C) (E. J. Freireich)

Nutritional aspects of the therapy of acute leukemia (NCI-4-716C) (E. J. Freireich and E. Frei, III)

Infections, fever and host resistance in acute leukemia (NCI-4-717C) (C. Forkner)

A study of the clinical manifestations of acute leukemia (NCI-4-719C) (E. Frei III)

Amino acid metabolism in man (NCI-6-720C) (J. L. Fahey)

Metabolism of nutrients and calories in subjects with malignant disease (NCI-6-721C) (D. M. Watkin)

Characterization of over-all metabolism in chronic and acute leukemia (NCI-6-721D C) (D. M. Watkin)

Measure of blood volume, red cell mass and total circulating albumin in patients with cancer (NCI-6-722 C) (J. L. Steinfeld)

Distribution and degradation of human serum albumin labelled with I^{131} by different techniques (NCI-6-723A C) (J. L. Steinfeld)

Distribution and degradation of I^{131} albumin and I^{131} polyvinylpyrrolidone in normal subjects and patients with regional enteritis or ulcerative colitis. (NCI-6-723B C) (J. L. Steinfeld, R. S. Gordon, Jr. and J. D. Davidson)

Simultaneous measurement of total exchangeable sodium and potassium in cancer patients (NCI-6-724 C) (J. L. Steinfeld and R. E. Paton)

Vitamin B₁₂ metabolism in normal subjects and in subjects with malignant disease (NCI-6-725 C) (D. M. Watkin)

Renal clearances in malignant disease (NCI-6-726 C) (D. M. Watkin)

Pathologic Anatomy Branch

Exfoliative cytology applied to human diagnostic problems and research problems (NCI 852) (A. W. Hilberg)

Laboratory of Pathology

Histogenesis and pathology of induced and spontaneous tumors of laboratory animals (NCI 500) (H. L. Stewart)

Geographic pathology field studies on uterine cancer in New York City, Israel, and Washington, D. C. (NCI 501a) (L. J. Dunham, H. F. Dorn and H. L. Stewart)

Experimental studies relating to the geographic pathology of mouth cancer (NCI 501b) (L. J. Dunham)

Histogenesis and histopathology of cutaneous neoplasms (NCI 502) (J. H. Edgcomb)

An electron microscopic investigation of normal and neoplastic tissues (NCI 504) (W. G. Banfield)

Study of transplanted tumors in mice (NCI 506) (T. B. Dunn)

Mitochondrial changes in the reticulo-endothelial system of irradiated mice and protected against radiation sickness by intravenous injection of bone-marrow (NCI 507) (R. C. MacCardle)

Comparative study of normal pilosebaceous apparatus in human skin and those of basal-cell tumors and of acne (NCI 508) (E. J. Van Scott and R. C. MacCardle)

Cytological origin of thyrotrophin-secreting tumors of the anterior lobe of the pituitary gland of radiothyroidectomized mice, and of human pituitary tumors (NCI-509-A) (R. C. MacCardle)

Intracellular cytology of human tumors and of animal tumors transplanted in castrated hosts (NCI-509-C) (R. C. MacCardle)

Study of endocrine and reproductive organs in the mouse (NCI-510) (T. B. Dunn)

Steroid studies in stressed and tumor-bearing animals and man (NCI-511) (E. M. Nadel)

A study of the transplantable adrenocortical adenocarcinoma in Osborne-Mendel rat - steroids synthesized; their physiological effects on the host; metabolism of the neoplasm; and responses of the neoplasm to hormones and therapeutic agents (NCI-514) (A. S. Mulay)

Relation of hormonal factors to the induction of adrenocortical tumors in Osborne-Mendel rats (NCI-515) (A. S. Mulay)

Induction, pathogenesis and morphological alteration of tumors arising in bone (NCI-516) (A. W. Hilberg)

Cytochemistry and cytopathogenesis of cutaneous lesions of psoriasis, including a description of Golgi apparatus, minerals and ribonucleic acid of normal human skin (NCI-518) (R. C. MacCardle)

Study of the chemical and histopathological changes induced in adrenal glands of rats fed diets deficient in proteins (amino acids) and vitamins like riboflavin and pteroylglutamic acid (NCI-519) (A. S. Mulay)

Tissue culture of mouse leukemias (NCI-520) (C. J. Dawe)

Transformation of leukemia cells in vitro (NCI-521) (C. J. Dawe)

An investigation of the collagenous connective tissues (NCI-522) (W. G. Banfield)

Effects of ionizing radiation with emphasis on the morphologic alterations and neoplasms (NCI-523) (R. L. Swarm)

Morphological characteristics of human neoplasms in tissue culture (NCI-524) (A. S. Rabson)

Attempt to induce carcinoma of the bladder in hamsters by infection with *Schistosoma haematobium* (NCI-525) (E. Cram, L. B. Thomas, E. Berry and L. Olivier)

Morphology, pathogenesis and transplantability of spontaneous neoplasms within the canine species (NCI-527) (L. S. Lombard)

Cytology of ascites tumor cells (NCI-528) (R. Love)

Viral therapy of tumors (NCI-529) (R. Love)

Acquired tolerance (NCI-530) (R. Love)

Study of filterable agents isolated from mouse tumors (NCI-531) (R. Love)

Pathology of poliomyelitis of the chick embryo (NCI-532) (R. Love)

Induction of thymomas in mice by transplantation of thymus tissue into spleen (NCI-533) (R. W. O'Gara)

Laboratory of Physiology

Growth stimulating factor(s) present in Walker carcinoma 256 (NCI-900) (J. White and F. K. Millar)

Probable sources of available nitrogen for tumor growth (NCI-901) (J. White)

Alterations in nucleic acid and protein syntheses in the rat small bowel epithelium following X-irradiation (NCI-902) (J. N. Toal and J. White)

Study of biological effects of ultraviolet irradiation (NCI-904) (H. P. Blum)

Iodide concentrating mechanism of the thyroid gland (NCI-905) (S. H. Wollman)

Radioiodine metabolism of transplantable thyroid tumors (NCI-906) (S. H. Wollman)

Metabolic fate of the histidine side chain (NCI-909) (J. C. Reid)

Tumor autoradiography (NCI-910) (J. C. Reid)

Energy metabolism - instrument calibration and standardization (NCI-911A) (A. W. Pratt, W. C. White and B. E. Burr)

Energy metabolism - animal findings and future instrumentation (NCI-911B) (A. W. Pratt)

Energy metabolism - body composition studies (NCI-911C) (A. W. Pratt and F. K. Putney)

In vivo measurement of tumor pH with the capillary glass electrode (NCI-914) (H. Kahler)

Physical characterization of cellular bodies diffusion of DNA (NCI-915) (H. Kahler)

Characterization and comparison of nucleic acids and nucleoproteins of normal and neoplastic tissues (NCI-916) (J. Shack)

Characterization and comparison of the deoxyribonucleases and deoxyribonuclease inhibitors of malignant and normal tissues and body fluids (NCI-917) (J. Shack)

Research development projects in the field of electronics (NCI-918) (M. Coffey)

Development of analytical methods for urinary nucleotides and congeners (NCI-919) (J. C. Reid)

Identification of Compound "A-20" (NCI-920) (J. C. Reid)

Increase in induced pulmonary tumors in mice associated with exposure to high concentration of oxygen (NCI-921) (W. E. Heston and A. W. Pratt)

Electron microscopy of tobacco smoke (NCI-922) (H. Kahler)

Electron microscopy of mouth parts. Mosquitos which transmit rabbit fibroma virus (NCI-923) (H. Kahler)

Mechanism of deoxyribonuclease activation (NCI-924) (J. Shack)

Radiation Branch

Radiation injury and repair (NCI-624) (H. L. Andrews)

Dosimetry of high energy radiations (NCI-628) (H. L. Andrews)

The effect of ionizing radiation on amino acids (NCI-629) (C. R. Maxwell)

Late effects of irradiation in animals protected from early death by bone marrow or antibiotic treatment (NCI-634) (W. W. Smith, G. Brecher, K. Snell and R. Swann)

Lethal effect of visible light on a mutant strain of haploid yeast
I. General dependencies (NCI-636) (M. M. Elkind)

Development of high-intensity X-ray source (NCI-637) (H. L. Andrews)

A study of the life span of the nucleated red cell (NCI-639)
(K. C. Brace)

Effect of 100% oxygen at atmospheric pressure on antibody production
(NCI-640) (F. Smith)

The effect of irradiation on susceptibility to viral infections
(NCI-641) (W. W. Smith and B. Eddy)

Antibody production in irradiated mice: Effect of chronic, and intermittent exposure to ionizing radiation and fractional body shielding on hemolysin production (NCI-642) (F. Smith)

Long term survival and tumor incidence following acute or chronic irradiation (NCI-643) (J. Hollcroft)

Modification of X-irradiation treatment of localized tumors
(NCI-644) (J. Hollcroft)

Effect of X-irradiation on disseminated lymphosarcomas, L-2, L₂C
(NCI-645) (J. Hollcroft)

Electron beam radiation therapy study of mycosis fungoides
(NCI-651 C) (J. R. Andrews)

The influence of oxygen in modifying radiation response (NCI-653 C)
(J. R. Andrews)

Time as a modifier of clinical radiation response (NCI-654 C)
(J. R. Andrews)

Determination of radiation tolerance to the brain by means of electroencephalographic studies (NCI-655 C) (P. Rubin and J. R. Andrews)

Attempt at radiotherapy with S³⁵ sulfate (NCI-656 C) (P. Rubin and R. Andrews)

The effect of whole and partial body irradiation on bone growth (NCI-657)
(K. C. Brace)

Lethal effect of visible light on a mutant strain of haploid yeast. II
Absorption and action spectra (NCI-658) (M. M. Elkind)

Action of endotoxin in irradiated animals: Reduced mortality; increased
resistance to infection; advanced hematopoietic recovery (NCI-659) (W. W. Smith)

Clinical radiation dosimetry (NCI-660c) (R. W. Swain)

Continuous visual monitoring of 2 mev rotational therapy (NCI-661c) (J. R.
Andrews)

The effect of ionizing radiations on advanced carcinoma of the urinary bladder
(NCI-662c) (J. R. Andrews)

Carcinoma of the esophagus treated by 2 mev rotational therapy (NCI-663c)
(P. Rubin and J. R. Andrews)

Treatment of carcinoma of the cervix treated by 2 mev rotational therapy
versus 250 KV therapy (NCI-664c) (P. Rubin and J. R. Andrews)

Study of changes in DNA and RNA following X- irradiation in preparations of
cytologic smears from mucous membranes (NCI-665c) (P. Rubin and R. Andrews)

Studies in secretory sialography (NCI-666c) (P. Rubin and B. Besse)

Treatment of myeloma with P³² (NCI-667c) (A. L. Flick)

Human radioisotope studies (NCI-668c) (K. C. Brace)

Surgery Branch

Evaluation of radical surgery and the development of new surgical techniques
as a therapeutic means of palliating or definitive therapy of advanced cancer
(C-10-7510) (R. R. Smith)

Clinical investigation in the use of viruses in the treatment of human cancer
(C-9-7520) (R. R. Smith and R. J. Huebner)

Cytologic determination of number of tumor cells and/or recurrences recovered
or found in an operative wound following removal of a primary cancer in
continuity with its regional lymph drainage area containing metastases
(C-8-753 C) (R. R. Smith)

Evaluation of the nature, cause, and means of preventing seeding of operative
wounds using transplantable animal tumors (C-8-754) (R. R. Smith)

The development of new methods for treatment of lung cancer using regional
chemotherapy: clinical research (C-10-755-C) (J. H. Waite)

Development of new methods in the treatment of lung cancer using regional chemotherapy: Laboratory Research (C-10-756) (J. H. Waite)

Prevention of operative site recurrence by improvement of biopsy wound closure technique (C-8-757-C) (J. H. Waite)

Prevention of operative site tumor recurrence by improvement of biopsy wound closure techniques: Laboratory Research (C-8-758) (J. H. Waite)

Effect of operation, anesthesia, and cortisone on the incidence of lung metastases in experimental animals (C-10-759) (W. M. Kramer)

Intestinal mucous membrane grafts to the mouth (C-10-760) (H. Herbsman)

Blood-pressure servo-regulator (C-10-761) (J. H. Waite)

Blood volume, plasma volume, red cell mass and total circulating plasma protein and electrolytes in cancer patients during pre-operative bowel preparation and the period after radical surgery (C-10-762-C) (R. A. Milch)

The effect of prednisone (Metacorten) upon the healing of wounds (C-10-763) (L. M. Cramer)

The transplantation of "conditioned" endocrine tissue (C-8-764) (L. M. Cramer)

Effect of carcinogenic agents using a bronchial pouch preparation in the dog (C-10-765) (J. H. Waite)

Combination therapy of esophageal carcinoma (C-10-766-C) (J. H. Waite)

Physiologic and environmental factors associated with hypothermia during extensive surgical procedures (C-10-767-C) (H. Herbsman)

The effect of hypophysectomy on uropepsin excretion (C-10-768-C) (J. R. Jude)

Circulating plasma lipids in postoperative patients (C-10-769-C) (R. A. Milch)

Study of the effect of growth hormone on cartilage transplants and of the survival and growth of these transplants (C-10-770) (W. E. Schatten)

Experimental reconstruction of the extra-hepatic biliary system (C-10-771) (W. E. Schatten)

Determination of the frequency of recurrence of chromogen in the urine of patients in the pre- and postoperative periods and on various types of diets (C-10-772-C) (J. R. Jude)

Heterotransplantation of tumor in endocrine-deficient animals (C-10-773) (W. E. Schatten)

NATIONAL HEART INSTITUTE

Technical Services Branch

Lipoprotein biology (NHI-5) (T. Gordon)

Heart disease epidemiology study (NHI-7) (T. R. Dawber)

Laboratory of Cardiovascular Physiology

Investigation of the effects of varying the parameters of the heart's activity on its oxygen consumption (NHI-22) (S. J. Sarnoff)

The development of a stable, non-failing, isolated heart preparation nourished by biochemically normal blood: the isolated supported heart preparation (NHI-23) (S. J. Sarnoff)

The presence of a potent coronary vasodilator in human urine (NHI-24) (S. J. Sarnoff)

The effect of a sympathomimetic agent, Wyamine, on myocardial contractility (NHI-25) (S. J. Sarnoff)

Heart valve replacement (NHI-26) (S. J. Sarnoff)

Quantitative hemodynamic analysis of valvular insufficiency (NHI-27) (E. Braunwald, G. H. Welch, Jr., S. J. Sarnoff)

The action of human plasma on the isolated frog heart (NHI-28) (S. Hajdu, E. Leonard)

Effects of blood flow and vascular tone on transcapillary diffusion (NHI-29) (E. Renkin)

Transient and steady state pressure flow relationships in an active vascular bed (NHI-30) (W. N. Stainsby, E. M. Renkin)

Neural and humoral factors influencing venous tone (NHI-31) (J. R. Blinks, K. Sussman, S. J. Sarnoff)

The sequence of ventricular contraction in human bundle branch block (NHI-32) (E. Braunwald, A. G. Morrow)

The use of dye dilution curves from the left heart and aorta for the localization of left to right shunts and the detection of valvular insufficiency (NHI-33) (A. G. Morrow)

Physiology of hypothermia (NHI-34) (R. B. Case, W. N. Stainsby)

Nature of the circulatory depression produced by high levels of positive pressure breathing (NHI-35)
(E. Braunwald, D. M. and S. J. Sarnoff)

Laboratory of Cellular Physiology and Metabolism

Structure and metabolism of mucopolysaccharides (NHI-36)
(E. D. Korn)

Enzymatic degradation of the cholesterol side chain by mammalian enzyme systems (NHI-37) (M. G. Horning)

Studies on lipoproteins (NHI-38) (E. D. Korn)

Studies on lipoprotein lipase (NHI-39) (E. D. Korn)

Synthesis, isolation and characterization of compounds of biological interest (NHI-40) (H. T. Miles)

Structure of ribonuclease and its correlation with biological activity (NHI-41) (M. Sela, C. B. Anfinsen)

Investigation of structural and functional relationships in ribonuclease (NHI-42) (F. W. White, C. B. Anfinsen)

A study of carbon dioxide fixation in the hen oviduct (NHI-43) (R. W. Hendler)

A study of the mechanism of protein biosynthesis in the hen oviduct (NHI-44) (R. W. Hendler)

Enzymatic degradation of cholesterol by insect enzyme systems (NHI-45) (M. G. Horning)

Energy transfer associated with electron transport (NHI-46) (W. W. Kielley)

The role of pteridine coenzymes in serine metabolism (NHI-47) (B. E. Wright (Kalckar))

The enzymatic synthesis of "energy-rich" compounds and their utilization in biosynthesis reactions (NHI-48)
(E. R. Stadtman)

A. Enzymatic degradation of glycine, proline, serine, and lysine B. The role of C₁ compounds in intermediary metabolism (NHL-49) (T. C. Stadtman)

Studies of synthesis and degradation of proteins (NHL-50) (D. Steinberg, M. Vaughan)

Studies of inhibitors of cholesterol biosynthesis (NHL-51) (D. Steinberg, D. S. Fredrickson, R. Masters)

Studies on homeostatic control of cholesterol biosynthesis (NHL-52) (D. Steinberg, J. Avigan)

High molecular weight components of skeletal muscle and their interactions. Conversion of fibrinogen into fibrin (NHL-53) (E. Mihalyi)

Studies on the synthesis and degradation of proteins (NHL-54) (M. Vaughan)

Investigation of an unidentified phosphorus containing compound present in human serum (NHL-55) (M. Vaughan)

Studies on the mechanism of action of the sulfonylurea hypoglycemic agents (NHL-56) (M. Vaughan)

The inactivation of insulin by an enzyme present in liver (NHL-57) (M. Vaughan)

Metabolism of lipids and lipoproteins (NHL-58) (D. S. Fredrickson)

Studies on clinical nephritis (NHL-59) (J. H. Baxter, H. C. Goodman)

Studies on protein and lipid metabolism in patients with nephrosis (NHL-60) (J. H. Baxter, H. C. Goodman)

Studies on experimental nephritis: the nephrotoxic serum antigen (NHL-61) (J. H. Baxter)

Studies on antibodies to tissue antigens in clinical and experimental immune response (NHL-62) (H. C. Goodman)

Clinical studies on plasma proteins (NHI-63) (B. S. Gordon, Jr.)

Metabolism of plasma unesterified fatty acids (NHI-64)
(R. S. Gordon, Jr.)

Interactions of fatty acids with human serum albumin
(NHI-65) (D. S. Goodman)

Pathogenesis of atherosclerosis (NHI-66) (J. H. Bragdon)

Laboratory of Chemistry of Natural Products

Enzymatic and metabolic transformations of amino acids
(NHI-67) (C. C. Sweeley)

Isolation, structural studies and synthesis of naturally-
occurring plant bases, particularly those having hypotensive
action (NHI-68) (H. M. Fales)

Chemical studies of bufotenine, N,N-dimethyltryptamine,
N,N-dimethyltryptophan and their oxides (NHI-69) (M. S. Fish)

Enzymatic and metabolic studies of bufotenine, N,N-
dimethyltryptamine, N,N-dimethyltryptophan, their oxides
and related materials (NHI-70) (M.S. Fish)

Isolation and identification of indoles from natural sources
(NHI-71) (M. S. Fish)

Aspects of tryptophan metabolism in humans (NHI-72)
(M. S. Fish)

Studies on plant alkaloids (NHI-73) (S. M. Goodwin)

Determination of the structure of tazettine (NHI-74)
(R. J. Highet)

Investigation of the alkaloids of Cassia excelsa
(NHI-75) (R. J. Highet)

The preparation of compounds for research projects in
chemistry and physiology (NHI-76) (P. F. Highet)

Isolation and structure of Ormosia bases (NHI-77)
(H. A. Lloyd)

A fundamental study of charge-transfer complexes
(NHI-78) (W. L. Peticolas)

Surface properties of amino acids and peptides (NHI-79)
(W. L. Peticolas)

Screening and isolation of naturally-occurring substances
with hypotensive action (NHI-80) (D. L. Rogerson)

Isolation of new components from animal tissue (NHI-81)
(D. L. Rogerson)

Detection, isolation and characterization of naturally-
occurring hypotensive substances (NHI-82) (W.H. Tallent)

Studies on new biologically important substances in
brain tissue (NHI-83) (W. H. Tallent)

The structures of ambelline and undulatine (NHI-84)
(E. W. Warnhoff)

New syntheses of polycyclic compounds related to natural
products (NHI-85) (G. N. Walker)

Structure of Amaryllidaceae alkaloids (NHI-86) (W. C.
Wildman)

Laboratory of Chemical Pharmacology

Studies on antiarrhythmic drugs (NHI-87) (H. M. Maling)

Studies with muscular relaxants (NHI-88) (B. B. Brodie,
J. J. Burns)

Relationships among ventricular stroke work, contractile
force and systemic output (NHI-89) (M. deV. Cotten,
H. M. Maling)

Comparison of adrenergic blocking drugs in inhibiting
cardiac actions of sympathomimetic amines (NHI-90)
(M. deV. Cotten)

Contrast between the effects of increased cerebrospinal fluid pressure and augmented reflex sympathetic activity on the cardiac contractile force (NHL-91) (M. deV. Cotten)

Reflex control of cardiac contractile force (NHL-92) (M. deV. Cotten)

Hypersensitivity of the heart to epinephrine and norepinephrine following experimental coronary artery occlusion in the dog (NHL-93) (H. M. Malling, N. C. Moran)

Hypersensitivity of heart to small doses of norepinephrine following large intravenous injections of norepinephrine (NHL-94) (H. M. Malling)

The preparation of compounds with anti-digitalis activity (NHL-95) (E. O. Titus)

Studies on reserpine-induced hyperglycemia and release of adrenal catechol amines (NHL-96) (P. A. Shore)

Studies on central autonomic integrations (NHL-97) (D. F. Bordanski)

Physiologic disposition and fate of reserpine (NHL-98) (S. M. Hess)

Pharmacological studies on the interrelationship between the cholinergic and adrenergic nervous systems (NHL-99) (N. C. Moran)

Isolation of cardiotonic substances from mammalian tissues (NHL-100) (E. Titus, S. Hajdu, H. Weiss)

Application of spectrophotofluorometric assay (NHL-101) (B. B. Brodie)

The effect of various dietary factors on microsomal drug metabolism (NHL-102) (B. B. Brodie, B. N. La Du, Jr.)

Tyrosine oxidation (NHL-103) (B. N. La Du, Jr.)

Model enzyme systems in the study of drug metabolism
(NHI-104) (B.N. La Du, Jr.)

Microsomal drug enzymes - mechanism of action (NHI-105)
(B.B. Brodie, B.N. La Du, Jr.)

Studies with intravenous anesthetics (NHI-106) (B.B.
Brodie, J.J. Burns)

Comparative biochemistry of drug metabolism (NHI-107)
(B.B. Brodie)

Studies on length-tension curves for cardiac muscle in
vivo (NHI-108) (M.deV. Cotten)

Studies on the pharmacology of alkaloids derived from
Ormosia panamensis (NHI-109) (G.P. Quinn, N.C. Moran)

Studies on anti-rheumatic drugs (NHI-110) (B.B. Brodie,
J.J. Burns)

Reversal of the cardiac effects of epinephrine by
ouabain during hypothermia (NHI-111) (M.deV. Cotten,
T. Cooper)

Absorption of drugs by the intestine (NHI-112) (B.B.
Brodie)

Biosynthesis and biotransformation of ascorbic acid
(NHI-113) (J.J. Burns)

Studies on the mechanism of action of steroid hormones.
Role of steroids in cation transport (NHI-114) (E.O.
Titus, E. Schiffmann)

Studies on the blood-brain barrier (NHI-115) (S.E.
Mayer)

Role of norepinephrine in the central nervous system
(NHI-116) (P.A. Shore)

The metabolism of toluene and some alkylbenzenes by
mammalian liver preparations (NHI-117) (J. Gillette)

Mechanism of action of reserpine - studies of the biochemical effects of reserpine influencing serotonin (NHI-118) (P. A. Shore)

The enzymatic oxidation of benzyl alcohol and other aromatic alcohols (NHI-119) (J. R. Gillette)

The pharmacological actions of oxypanamine, NHI-196, an alkaloid derived from *Crnasia panamensis* (NHI-120) (W. C. Moran)

Studies on the biosynthesis of cardiotonic steroids (NHI-121) (E. O. Titus and E. Schiffmann)

Development of a physico-chemical assay procedure for norepinephrine and epinephrine in the brain (NHI-122) (P. A. Shore)

Drug enzyme systems (NHI-123) (J. Foote)

The fate of substances introduced into the cerebrospinal fluid (NHI-124) (S. E. Mayer)

Studies on the role of serotonin in the body - the mechanism of its storage and release (NHI-125) (P. A. Shore)

Laboratory of Clinical Biochemistry (NHI-126) (C. Mitoma)

Studies on phenylpyruvic oligophrenia (NHI-126) (C. Mitoma)

Studies on serotonin (NHI-127) (H. Weissbach and S. Udenfriend)

Hydroxylation and biogenesis of aromatic compounds (NHI-128) (C. Mitoma)

The role of serotonin in anaphylaxis (NHI-129) (H. Weissbach)

Hydroxyproline and hydroxylysine metabolism and their implications in collagen formation (NHI-130) (C. Mitoma)

Studies on adrenaline, noradrenaline and related catechol compounds (NHI-131) (S. Udenfriend)

Studies on indoleacetic acid (NHI-132) (H. Weissbach)

General Medicine and Experimental Therapeutics Branch

Studies on vasoactive substances (NHI-133) (A. Sjoerdsma)

Study of the movement of large molecules through aortic and other connective tissues (NHI-134) (I. E. Duncan, Jr.)

Vasomotor responses related to the gastrointestinal tract (NHI-135) (B. J. Haverback)

The action and metabolism of drugs (NHL-136) (J. D. Davidson)

The effect of indole compounds on the gastrointestinal tract (NHL-137) (B. J. Haverback)

Cardiac output determinations and calculation of aortic and mitral valve size during surgery and left heart catheterization (NHL-138) (H. L. Tanenbaum)

Studies of the relationship of steroid structure to function (NHL-139) (F. C. Bartter)

Chemical and physiological studies of aldosterone metabolism (NHL-140) (F. C. Bartter)

Action of parathyroid hormone (NHL-141) (F. C. Bartter)

Cellular transport systems (NHL-142) (A. Despopoulos)

Anaphylaxis and hypersensitivity (NHL-143) (T. P. Waalkes)

Clinical electrocardiography (NHL-144) (R. P. Grant)

Hemodynamic and metabolic factors of heart disease (NHL-145) (R. P. Grant)

The evaluation of cardiac reserve in human subjects as reflected by alterations in lung elasticity and resistance to gas flow (NHL-146) (D. L. Fry)

Evaluation of the recording characteristics of modern physiological pressure measuring systems (NHL-147) (D. L. Fry)

The evaluation of the mechanical and hydrodynamic characteristics of the cardiovascular system in animals (NHL-148) (D. L. Fry)

Dynamics of aortic stenosis (NHL-149) (H. T. Dodge - H. L. Tanenbaum)

Gerontology Branch

Metabolism and endocrinology. a. Thyroid function b. Vitamin B₁₂ (NHL-150) (G. W. Gaffney)

Age changes in the chemical composition of various tissues of the rat (NHL-151) (M. J. Yiengst)

Age changes in renal physiology (NHL-152) (N. W. Shock and C. H. Barrows)

Age changes in cellular and tissue biochemistry (NHL-153) (C. H. Barrows)

Cardiovascular hemodynamics. III. The peripheral circulation in man (NHI-154) (M. Landowne)

Cardiovascular hemodynamics. II. Cardiac performance in man (NHI-155) (M. Landowne)

Cardiovascular hemodynamics. I. Arterial performance in man (NHI-156) (M. Landowne)

Pulmonary physiology as related to age (NHI-157) (A. H. Norris)

Age differences in body size composition (NHI-158) (A. H. Norris)

Age changes in human performance (NHI-159) (A. H. Norris and J. A. Falzone)

Laboratory of Kidney and Electrolyte Metabolism

Cation transfer across the red cell membrane (NHI-160) (E. T. Dunham)

Ionic exchange in secreting cells (NHI-161) (E. Cotlove and C. A. M. Hogben)

C¹⁴-labelled inulin as a tracer for inulin (NHI-162) (E. Cotlove)

Water transfer across the gastrointestinal epithelium (NHI-163) (C. A. M. Hogben)

Salt transfer across the small intestinal epithelium (NHI-164) (C. A. M. Hogben)

Anion transport across the gastric mucosa (NHI-165) (C. A. M. Hogben)

The metabolism of urea in man (NHI-166) (M. Walser)

Factors involved in the production of ammonia by the kidney, and the relation of production to ammonia excretion in the dog (NHI-167) (J. Orloff)

Effect of reducing glomerular filtration rate on renal function (NHI-168) (R. W. Berliner, D. G. Davidson)

Isolation of a cardiotonic substance from mammalian tissues (NHI-169) (S. Hajdu)

Studies on the mechanism of action of diuretics (NHI-170) (T. J. Kennedy, Jr.)

Studies on the function of single nephrons in *Necturus maculosus* (NHI-171) (T. J. Kennedy, Jr.)

The renal excretion of phosphate in the chicken (NHL-172)
(D. G. Davidson)

Effect of the chronic administration of pitressin in the dog
(NHL-173) (R. W. Berliner)

Mathematical formulations of the relationship between solute,
sodium, and water excretion (NHL-174) (M. Walser)

The effect of chlorothiazide in the chicken (NHL-175) (J. Orloff)

Renal diluting function in nephrosis (NHL-176) (M. Walser)

The graded effect of purified vasopressin and urinary solute on
the excretion of solute-free water (NHL-177) (J. Orloff)

The role of the autonomic nervous system in the control of
sodium excretion in man (NHL-178) (E. N. Wagner, Jr.)

Mechanisms of fluid and electrolyte retention in experimental
cardiac failure (NHL-179) (J. O. Davis)

Method and apparatus for automatic titration of chloride
(NHL-180) (E. Conlove)

Absorption of drugs by the intestine (NHL-181) (C. A. M. Hogben)

Surgery Branch

The sequence of ventricular contraction in human bundle branch
block (NHL-182) (E. Braunwald and A. G. Morrow)

The use of dye dilution curves from the left heart and aorta for
the localization of left to right shunts and the detection of
valvular insufficiency (NHL-183) (A. G. Morrow, E. Braunwald, and
H. Eisenbaum)

Evaluation of left atrial pressure contours in differentiating mitral
stenosis and mitral insufficiency (NHL-184) (A. G. Morrow, E. H. Sharp,
E. Braunwald, and J. A. Haller, Jr.)

Experimental production of graded valvular mitral stenosis in dogs
(C. S. Weldon and J. W. Gilbert)

The reactivity of cardiac muscle to adrenergic agents after bilateral
thoracic sympathectomy (NHL-186) (T. Cooper)

Studies on the excitability of ventricular heart muscle during hypo-
thermia with and without procaine blockade of the caval-atrial junction
(NHL-187) (L. R. Radigan, T. A. Lombardo, and T. Cooper)

Intrapulmonary transplantation of autogenous thyroid tissue per
Cournand catheter (NHL-188) (R. Sanders and J. W. Gilbert)

Reversal of the **cardiac** effects several sympathomimetic amines by digitalis glycosides during hypothermia (NHI-189) (M. DeV. Cotten, and T. Cooper)

Clinical application of nitrous oxide in the detection of left-to-right intracardiac shunts (NHI-190) (A. G. Morrow, R. Sanders, and E. Braunwald)

Transbronchial left heart catheterization (NHI-191) (A. G. Morrow, E. H. Sharp, and E. Braunwald)

Study and application of the Melrose pump oxygenator (NHI-192) (E. H. Sharp, C. Weldon, J. W. Gilbert, and A. G. Morrow)

Experimental closure of ruptured sinus of Valsalva aneurysms (NHI-193) (R. R. Baker, H. E. Hanson and A. G. Morrow)

Cardiac output determinations and calculations of aortic and mitral valve size during surgery and left heart catheterization (NHI-194) (H. L. Tanenbaum)

Laboratory of Technical Development

Development of methods for measurement of blood flow (NHI-195) (R. L. Bowman)

Microanalytic methods for alkali metals in micropuncture samples (NHI-196) (R. L. Bowman)

Development of a mechanical pump (NHI-197) (S. McCabe)

Development of a prosthetic heart valves (NHI-198) (S. McCabe)

Drying and hydration studies of proteins and tissues (NHI-199) (J. L. Stephenson)

Development of a self-balancing potentiometer (NHI-200) (J. L. Stephenson)

Electron microscopy (NHI-201) (J. L. Stephenson)

Physics of ultra-rapid freezing of water, colloidal solutions and protoplasm (NHI-202) (J. L. Stephenson)

Infra-red microspectrometry (NHI-203) (J. L. Stephenson)

Development of a method of separating erythrocytes by their density (NHI-204) (M. Eden)

Development of a probabilistic model for growth (NHI-205) (M. Eden)

Development of a micro glass electrode (NHI-206) (M. Eden)

Development of equipment for studies of adsorption (NHI-207)
(M. Eden)

Catheter tip pressure gauge (NHI-208) (F. W. Noble)

Computer for a catheter tip flowmeter (NHI-209) (F. W. Noble)

Direct coupled electrokymograph (NHI-210) (F. W. Noble)

NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES

Laboratory of Clinical Investigations

Rheumatic fever and streptococcal infection (NIAID-7(c)) (J. P. Utz)

Respiratory viral diseases (NIAID-8(c)) (J. P. Utz)

Brucellosis (NIAID-9(c)) (N. B. McCullough)

Granulomatous disease. A. Sarcoidosis B. Systemic fungal diseases (NIAID-10(c)) (N. B. McCullough)

Hepatitis and mononucleosis (NIAID-11(c)) (J. P. Utz)

Aseptic meningitis (NIAID-12(c)) (J. P. Utz)

Allergy-immunology (NIAID-13(c)) (N. B. McCullough)

Enteric diseases (NIAID-14(c)) (N. B. McCullough)

Helminthic infestations. A. Filariasis B. Intestinal nematode infestations C. Trematode infestations D. Infestations due to cestodes (NIAID-15(c)) (H. K. Beye)

Protozoal infections. A. Amebiasis B. Trichomoniasis C. Toxoplasmosis D. Blood and tissue protozoan disease (NIAID-16(c)) (H. K. Beye)

Bacteriological studies (NIAID-17(c)) (L. E. Gibson)

Biochemical studies (NIAID-18(c)) (H. G. Steinman)

Leptospirosis (NIAID-19(c)) (N. B. McCullough)

Q fever (NIAID-20(c)) (J. P. Utz)

Immunochemistry (NIAID-21(c)) (S. Dray)

Laboratory of Infectious Diseases

Nutrition and metabolism of normal and malignant cells in tissue culture (NIAID-37) (H. Eagle)

In vitro synthesis of antibodies (NIAID-38) (A. K. Saz)

Mode of action of aureomycin (NIAID-39) (A. K. Saz)

Nucleic acid synthesis by mammalian cells in tissue culture (NIAID-40) (N. P. Salzman)

Metabolic pathways of cells in tissue culture (NIAID-41) (S. Barban)

Genetic variation in cultures of mammalian cells (NIAID-42) (R. DeMars)

Basic studies of virus-host cell relationships (NIAID-43)
(K. Habel)

Evaluation of the clinical types of poliomyelitis from
etiologial point of view (NIAID-44) (K. Habel)

Epidemiological and laboratory investigations of infectious
diarrhea of infancy (NIAID-45) (K. Habel)

Cellular antibodies (NIAID-46) (J. W. Hornibrook)

Cultivation of mitochondria in vitro (NIAID-47) (H. G. duBuy)

Investigations of the chemical composition of Cocksackie A-10
virus and its host cell elements (NIAID-48) (C. F. T. Mattern)

Studies on the latent period of EMC virus (NIAID-49)
(C. F. T. Mattern)

Studies on particle counting. II. Bacteria and subcellular
particles (NIAID-50) (C. F. T. Mattern)

Investigations of interference with enzymatic functioning of
mitochondria as a mechanism for causing neoplasia (NIAID-51)
(M. L. Hesselbach)

Cytopathogenic effect in single cells in tissue culture
(NIAID-52) (J. L. Showacre)

Biology of mitochondria and its relation to endogenous
and viral diseases (NIAID-53) (H. G. duBuy)

Characterization of mitochondria (NIAID-54) (J. L. Showacre)

Studies on tuberculosis (NIAID-55) (B. J. Olson)

Studies of bacterial agents in the Junior Village population
(NIAID-56) (B. J. Olson)

Chemical studies of the tubercle bacillus (NIAID-57) (G. W. Lones)

Synthesis and tests of potential chemotherapeutic agents
against Mycobacterium tuberculosis (NIAID-58) (B. Prescott)

Chemotherapy of tuberculosis: A. Detoxication studies
(NIAID-59) (B. Prescott)

Studies on purine and pyrimidine derivatives in tubercle bacilli.
1. Procedures 2. Applications (NIAID-60) (G. Kauffmann)

The effect of animal virus reproduction on host cell metabolism
(NIAID-61) (H. B. Levy)

Nucleoproteins and nucleic acids as antigens (NIAID-62) (H. B. Levy)

Iron-binding proteins as antigens and iron metabolism in
allergic and hyper-sensitive states and infectious diseases
(NIAID-63) (A. L. Schade)

Studies on streptococcal disease: A. The identification and
role of streptococci in the spectrum of human upper respiratory
disease (NIAID-64) (R. M. Cole) B. The localization of
injected streptococcal hyaluronidase by the fluorescent anti-
body technique (NIAID-64a) (R. M. Cole)

Studies of mycoses and pathogenic fungi (NIAID-65) (C. W. Emmons)

Physiological studies on pathogenic fungi (NIAID-66) (L. Pine)

Investigations on etiological agents of diarrheal diseases
(NIAID-67) (A. E. Verder)

Epidemiological studies of infectious diseases: A. Basic
epidemiologic studies of undifferentiated respiratory
illnesses generally known as the common cold, catarrhal fever,
non-streptococcus sore throat, ARD, and adenoviruses (NIAID-68)
(J. A. Bell)

Epidemiological studies of acute respiratory diseases
including influenza, and influenza vaccine prophylaxis in
general population groups (NIAID-69) (J. A. Bell)

Studies of viral agents in relation to illness in the
general population (NIAID-70) (A. Shelokov)

Influenza laboratory studies (NIAID-70a) (D. J. Davis)

Growth and metabolism of rickettsiae (NIAID-70b) (E. B. Jackson)

Adenovirus vaccine studies (NIAID-70c) (R. J. Huebner)

Studies of the human salivary gland virus (NIAID-70d)
(W. P. Rowe)

Cultural, serologic and physico-chemical properties of the guinea pig salivary gland virus, and comparison of these properties with the human and mouse agents (NIAID-70e)
(J. W. Hartley)

Study of viruses as causes of the common cold and other common respiratory diseases (NIAID-70f) (W. P. Rowe)

Studies of the viruses as possible etiologic agents in chronic, recurrent, and neoplastic diseases (NIAID-70g)
(W. P. Rowe)

Experimental virotherapy of cancer (NIAID-70h) (R. J. Huebner)

Development and application of techniques for rapid identification and characterization of numerous, newly recognized viruses (NIAID-70i) (L. Rosen)

Laboratory and epidemiologic studies of viral diseases in infants and early childhood (NIAID-70j) (L. Rosen)

Laboratory of Tropical Diseases

Foreign field stations A. Control of snail intermediate hosts of the human schistosomes in Egypt B. Studies on the chemical control of molluscan intermediate hosts of schistosomiasis in Brazil (NIAID-72) (W. H. Wright)

Germ-free animal studies (NIAID-73) (W. H. Wright)

Studies of helminths and the diseases caused by them
A. Host-parasite relations in worm infections of laboratory animals B. Definition of nutritional requirements and determination of excretory products of parasitic nematodes C. Investigation of intermediate hosts and vectors of human diseases caused by worms D. An investigation of Pneumocystis as an etiologic agent in human cases of atypical pneumonia E. Nutritional aspects of helminthiasis F. Pathological physiology of schistosome infections G. Role of certain helminths in the causation of cancer (NIAID-74)
(L. J. Olivier)

Studies of arthropods, their control and virus-arthropod relations: A. Pathogen-arthropod host relations with special reference to survival and multiplication of viruses in arthropod tissues; B. Ecology and behavior of arthropods of public health importance; C. Arthropod transmission of virus neoplasms of cottontail rabbits (Shope's fibroma and Shope's papilloma); D. Studies on the mode of action of insecticides with special reference to the nature of tolerance and the development of resistance (NIAID-75) (P. A. Woke)

Epidemiology of parasitic diseases: A. Virus-parasite associations; B. Virus-arthropod relationships; C. Epidemiology of intestinal parasites in institutional populations; D. Chemotherapy of institutional parasitoses; E. Cytological studies of parasitic protozoa; F. Cytogenetics and species relations of insect disease vectors; G. Genetic selection in anopheline mosquitoes; H. Malaria studies; I. Biological studies of *Toxoplasma gondii*; J. The chemotherapy of toxoplasmosis; K. The epidemiology of toxoplasmosis (NIAID-76) (M. D. Young)

Studies on the biology and pathogenesis of protozoan parasites of man: A. Studies on amoebiasis; B. Genital trichomoniasis; C. Studies on toxoplasmosis (NIAID-77) (L. Jacobs)

Chemotherapy of parasitic diseases: A. Drug resistance in Plasmodia; B. Experimental chemotherapy; C. Chemical pharmacology and toxicology; D. Clinical evaluation (NIAID-78) (G. R. Coatney)

Fundamental physiological and biochemical studies on parasites, intermediate hosts, and parasitized animals (NIAID-79) (T. von Brand)

Studies on the mechanism of allergy and immunologic phenomenon in parasitic diseases (NIAID-80) (J. Bozicevich)

Rocky Mountain Laboratory

Transmission of disease agents by certain vectors (NIAID-87) (C. B. Philip)

Studies on diseases having a reservoir of infection in the natural environment (NIAID-88) (J. F. Bell)

The relationship between viruses and tumors (NIAID-89) (L. Kilham)

The allergy and immunology of infections due to *Histoplasma capsulatum* (NIAID-90) (S. B. Salvin)

The mechanism of delayed allergy (NIAID-91) (S. B. Salvin)

Morphologic changes in tissue cultures of mammalian cells infected with certain viruses (NIAID-92) (B. H. Hoyer)

Metabolic studies of tissue cultures of mammalian cells infected with certain viruses (NIAID-93) (B. H. Hoyer)

Metabolic studies of rickettsial infections (NIAID-94)
(R. A. Ormsbee)

Immune prophylaxis of salmonella infections: separation and immunologic significance of antigens (NIAID-95) (E. Ribí)

Immune prophylaxis of mycobacterial infections (NIAID-96) (E. Ribí)

The isolation of the morphologic structures of mammalian cells (NIAID-97) (E. Ribí)

The growth characteristics of varicella and zoster viruses in tissue culture (NIAID-98) (E. J. Bell)

Studies on poliomyelitis with special emphasis on certain aspects of vaccination (NIAID-99) (C. M. Eklund)

Community health project (NIAID-100) (L. Luoto)

Studies on Colorado tick fever (NIAID-101) (C. M. Eklund)

Studies on the encephalitides (NIAID-102) (C. M. Eklund)

Laboratory of Nutrition and Endocrinology

- Required nutrients and their metabolic function - the rat (NIAMD-1) (F. S. Daft)
- Influence of accelerated growth on physiological functions - growth rate and longevity (NIAMD-2) (J. M. Hundley, E. G. McDaniel)
- Diabetes - vitamins and amino acid metabolism (NIAMD-3) (E. G. McDaniel, J. M. Hundley, F. S. Daft)
- Influence of accelerated growth on physiological functions - obesity in animals (NIAMD-4) (O. Mickelsen)
- Required nutrients and their metabolic role - the mouse (NIAMD-5) (G. M. Briggs)
- Required nutrients and their metabolic role - the chick (NIAMD-6) (G. M. Briggs)
- Diabetes - effect of hormones on metabolism of carbohydrates, fat, and protein (NIAMD-7) (R. O. Scow, S. S. Chornick)
- Required nutrients and their metabolic function - fat and fat-soluble vitamins (NIAMD-8) (J. G. Bieri)
- Required nutrients and their metabolic role - Vitamin B₁₂, methionine, choline, and related compounds (NIAMD-9) (M. R. S. Fox)
- Effect of ethylene oxide on foods (NIAMD-10) (R. S. Yamamoto)
- Nutritional requirements and factors influencing them - the guinea pig (NIAMD-11) (M. E. Reid)
- Isolation and general significance of Factor 3 against dietary necrotic degeneration (NIAMD-12) (K. Schwarz)
- General characterization of the dietary glucose tolerance factor (GTF), and clarification of its mode of action in glucose utilization (NIAMD-13) (W. Mertz, K. Schwarz)
- The mode of action of vitamin E, and the metabolic events in the development of dietary liver necrosis (NIAMD-14) (M. R. Green)
- Large-scale processing of biological material (NIAMD-15) (J. C. Keresztesy)
- Studies on folic acid (NIAMD-16) (M. Silverman, J. C. Keresztesy)
- Microbiological assays for vitamins and amino acids (NIAMD-17) (M. Silverman)
- Insulin studies (NIAMD-18) (E. Anderson, R. W. Bates)

Study of anterior pituitary hormones - mouse pituitary tumor elaborating ACTH and MSH (NIAMD-19) (E. Anderson, R. Bahn, P. G. Condliffe)

Study of anterior pituitary hormones: isolation of hormones (NIAMD-20) (R. W. Bates, P. G. Condliffe)

The influence of the central nervous system on metabolic functions - creatine and creatine metabolism (NIAMD-21) (K. Knowlton)

The influence of the central nervous system on metabolism - cardiovascular-renal function, water and electrolyte balance and aldosterone excretion (NIAMD-22) (E. W. Hawthorne, H. Wilson, E. Anderson)

The influence of the central nervous system on metabolic functions - endocrine activity (NIAMD-23) (H. Wilson, R. W. Bates)

Laboratory of Biochemistry and Metabolism

The enzymatic transformation of carbohydrates and their intermediary metabolism (NIAMD-24) (B. L. Horecker)

Studies on the biosynthesis and degradation of purines (NIAMD-25) (J. C. Rabinowitz)

Studies on the structure, biosynthesis and intermediary metabolism of nucleic acids and nucleotides (NIAMD-26) (L. A. Heppel)

Carbohydrate metabolism in mammalian tissues (NIAMD-27) (G. Ashwell)

The stereochemistry of enzymatic reduction (NIAMD-28) (J. D. Benedict, D. Stetten, Jr., U. Liddell, E. D. Becker)

Enzymatic conversions of sugars (NIAMD-29) (Y. J. Topper, B. Bloom, S. Segal)

Human diabetes and studies of insulin and insulin antagonists (NIAMD-30) (J. B. Field, F. Tietze, G. W. Brown, D. Stetten, Jr.)

The metabolism of glucuronic acid (NIAMD-31) (F. Eisenberg, Jr.)

Study of gluconic acid metabolism (NIAMD-32) (I. G. Leder)

A study of the effect of papaya extracts on mammalian cartilage (NIAMD-33) (I. G. Leder, S. S. Spicer)

Metabolism of glycogen (NIAMD-34) (M. R. Stetten)

Mass spectrometric analyses of stable isotopes (NIAMD-35) (A. L. Kenney)

Physiology of erythrocytes (NIAMD-36) (Y. J. Topper, B. Bloom, E. R. Simon)

Metabolic enzymes with special reference to hereditary changes
(NIAMD-37) (H. M. Kalckar)

a) Metabolism of inositol and its derivatives. b) The biosynthesis
of desoxyribose in bacteriophage infected E. coli (NIAMD-38)
(A. Weissbach)

The possible role of sugar nucleotides as glycosyl donors (NIAMD-39)
(V. Ginsburg)

Laboratory of Chemistry

Carbohydrates for biochemical research (NIAMD-40) (H. G. Fletcher, Jr.)

Chemistry of stevioside and related substances (NIAMD-41)
(H. G. Fletcher, Jr.)

Higher-carbon sugars, anhydro sugars, sugar alcohols and their
derivatives (NIAMD-42) (N. K. Richtmyer)

Chemical structure and analgesic action (NIAMD-44) (N. B. Eddy)

Study of analgesic action in humans with pathological pain (NIAMD-45)
(N. B. Eddy)

The synthesis of the unknown isomers of l-cocaine (NIAMD-46)
(S. P. Findlay)

Alternative syntheses of 6:7-benzmorphin derivatives (NIAMD-47)
(E. M. Fry)

Synthetic analgesic agents (NIAMD-48) (E. I. May)

Aminofluorenes as synthetic analgesics (NIAMD-49) (J. G. Murphy)

Analgesic drugs (NIAMD-50) (T. D. Perrine)

Laboratory of Chemistry

Basic research on thebaine chemistry (NIAMD-51) (L. F. Small)

Hydroxylated codeine derivatives (NIAMD-52) (L. F. Small)

Relationship of structure to analgesic action in the morphine series (NIAMD-53) (L. J. Sargent)

The structure of the aglycone of stevioside (NIAMD-55) (E. Mosettig, F. Dolder and H. F. Lichti)

The structure of cholegenin and isocholegenin (NIAMD-56) (E. Mosettig and M. J. Thompson)

The C-22 isomerism of a new class of dihydrosapogenins (NIAMD-57) (E. Mosettig, I. Scheer and M. J. Thompson)

Study of fecal steroids (NIAMD-58) (E. Heftmann)

Analysis of individual corticosteroids in urine (NIAMD-59) (D. F. Johnson)

Approaches to the synthesis of cortisone (NIAMD-60) (W. R. Nes and C. W. Shoppee)

Stereochemistry of the side chain of steroidal alkaloids (NIAMD-61) (Y. Sato)

The reaction of colchicine with amines (NIAMD-62) (W. R. Nes and H. Lettre)

Infrared spectroscopic studies (NIAMD-63) (H. K. Miller)

(Labile) Metabolites and antimetabolites of amino acids (NIAMD-64) (B. Witkop)

Laboratory of Pathology and Histochemistry

Researches in histochemistry (NIAMD-65) (S. S. Spicer, J. B. Longley, G. G. Glenner and R. D. Lillie)

A. Pathologic lesions induced by spermine and related substances - mechanism of induction. B. Human pathologic studies; diagnostic - research. (NIAMD-66) (L. L. Ashburn)

Study of mechanisms involved in infectious diseases (NIAMD-68) (E. M. Lerner, II)

A. Study of experimental endocarditis and glomerulonephritis in dogs. B. High altitude studies. C. Toxicity of iodides and iodates. D. Pathology of trypanosomiasis in rabbits. (NIAMD-69) (B. Highman, P. D. Altland, J. Roshe, S. E. Webster, and E. J. Tobie)

Comparative pathology (A) Rous sarcoma of chickens (in cooperation with Dr. A. W. Pratt NCI). (B) Production of newcastle disease virus (N.D.V.) for purification and assay. (C) Serotonin toxicity in rats. (D) Monkey safety tests of the Salk polio vaccine continues. (E) Neuropathology of dogs (NIAMD-70) (L. N. Loomis)

Regulation of hemopoiesis (NIAMD-71) (F. Stohlman, Jr. and G. Brecher)

Physiology of white cells in diabetes (NIAMD-72) (J. Shohl and G. Brecher)

Pathogenesis of experimental arthritis and pathology of rheumatism (NIAMD-73) (L. Sokoloff)

Pathogenesis of experimental arthritis and pathology of rheumatism (NIAMD-74) (L. Sokoloff)

Studies of dietary factors and embryonic growths as affecting rat leprosy and experimental amyloidosis (NIAMD-75) (G. L. Fite)

Studies on normal and abnormal human hemoglobins (NIAMD-76) (H. A. Itano)

Laboratory of Pharmacology and Toxicology

The physiological function, intermediary metabolism, and pathological effects of spermine, spermidine, and related amines (NIAMD-77) (S. M. Rosenthal, C. W. Tabor and E. C. Greese)

Mechanisms and therapy of traumatic shock (NIAMD-78) (R. C. Millican, K. Markley and S. M. Rosenthal)

1. Studies on the chemistry of α -tyrosine, especially as related to its iodo and nitro derivatives. The synthesis of some new meta diphenyl ethers having iodo and nitro substituents. 2. The synthesis of C^{14} -labeled spermine and C^{14} -labeled spermidine (NIAMD-79) (E. L. Jackson)

The chemotherapy of mouse leprosy (NIAMD-80) (Y. T. Chang)

Metabolic processes drug action and physical chemistry related to electrolyte distribution and bioelectrical phenomena as exemplified by nerve (NIAMD-81) (A. M. Shanes)

Histidine, histamine and related imidazoles and amines (NIAMD-82) (E. Tabor)

Biosynthesis of nicotinic acid (NIAMD-83) (A. H. Mehler)

Enzymatic reactions involved in the synthesis of metabolic derivatives of aspartic acid and methyl mercaptan (NIAMD-84) (S. Black)

Metabolic studies on folic acid and related compounds (NIAMD-85)
(O. Hayaishi)

Metabolism of aromatic amino acids and related compounds (NIAMD-86)
(O. Hayaishi)

Metabolism of dicarboxylic acids (NIAMD-87) (O. Hayaishi)

Toxicologic studies of iodates, the cellular localization of
hyaluronidase (NIAMD-88) (S. H. Webster, W. F. von Oettingen,
and E. W. Emmart)

Laboratory of Physical Biology

Pulmonary ventilation (NIAMD-89) (H. Specht)

Effects of hypoxia on physiologic mechanisms (NIAMD-90) (P. D. Altland)

Some biophysical and biochemical aspects of insect respiration (NIAMD-91)
(J. B. Buck)

The circulatory response to injection of the synthetic plasma expanders,
dextran and polyvinylpyrrolidone (NIAMD-92) (L. H. Marshall)

Ionization studies in the upper atmosphere (NIAMD-93) (H. Yagoda)

Mechanism of photo action (NIAMD-94) (F. S. Brackett)

Molecular structure determined by spectroscopic methods (NIAMD-95)
(U. Liddel)

Effects of radiant energy on the oxidative metabolism and chemosynthesis
in living cells (NIAMD-96) (R. A. Olson)

Investigations of the action of radiant energy on biologically
important compounds (NIAMD-97) (N. E. Sharpless)

Investigation of the macromolecular organization of living matter
(NIAMD-98) (R. W. G. Wyckoff)

The physical chemistry of membranes and complex membrane systems of
biological interest (NIAMD-99) (K. Sollner)

The mechanism of the orderly aggregation of proteins in building
up biological structures (NIAMD-100) (K. Laki and H. A. Saroff)

Isolation and characterization of the agglutination activating factor
in rheumatoid arthritis (NIAMD-101) (R. R. Williams)

Immunochemical approaches to the purification and characterization
of proteins (NIAMD-102) (R. R. Williams)

Arthritis and Rheumatism Branch

- Trial of new anti-rheumatic drugs (NIAMD-103c) (J. J. Bunim)
- Metabolism of adrenal steroids (NIAMD-104c) (R. E. Peterson)
- Studies in heavy metal storage diseases (NIAMD-107c) (M. J. Seven)
- Intermediary purine metabolism in gout (NIAMD-108c) (J. E. Seegmiller)
- Metabolic and therapeutic studies of gouty arthritis and hyperuricemia (NIAMD-109c) (J. E. Seegmiller and L. Laster)
- Biochemical reactions involving uric acid (NIAMD-110c) (L. Laster)
- Biochemical studies of metabolic diseases (NIAMD-111c) (J. E. Seegmiller, and L. Laster)
- Studies on the enzymatic metabolism of steroids (NIAMD-112c) (G. M. Tomkins)
- Biosynthesis of hyaluronic acid (NIAMD-113c) (K. L. Yielding)
- A study of the enzymatic defect in galactosemia (NIAMD-118c) (K. J. Isselbacher)
- Study of the ~~normal and abnormal~~ physiology of the ~~formed~~ elements of the blood (NIAMD-119c) (F. Stohlman, Jr.)

Metabolic Diseases Branch

- Metabolism of bile pigments (NIAMD-105c) (R. Schmid)
- Studies in anemia (NIAMD-106c) (R. Schmid)
- Total energy metabolism: studies in health and disease (NIAMD-114c) (G. D. Whedon)
- Studies in bone metabolism (NIAMD-115c) (G. D. Whedon and R. P. Heaney)
- Metabolic effects of adrenal-cortical steroids (NIAMD-116c) (G. D. Whedon)
- Effect of sulfonylurea derivatives on intermediary metabolism in man (NIAMD-117c) (T. F. Frawley)

Clinical Investigations Branch

Studies in cretinism (NIAMD-120c) (J. E. Rall)

Studies on the thyroxine-binding protein of serum (NIAMD-121c)
(J. Robbins)

The effect of the thyroid hormones on dehydrogenases in vitro
(NIAMD-122c) (J. Wolff)

Studies on pentose metabolism in man (NIAMD-123c) (S. Segal and
J. B. Wyngaarden)

Urinary purines in gout (NIAMD-124c) (J. B. Wyngaarden)

Studies in diabetes (NIAMD-125c) (J. B. Field)

Office of Director, Basic Research

Design, development, and construction activities (NIMH-TD-3)
(M. M. Davis, Jr.)

Laboratory of Neurophysiology

Intracellular recording from cerebral neurons (NIMH-NP1)
(W. H. Freygang, Jr.)

Effects of drugs on specific ionic conductance (NIMH-NP2)
(W. H. Freygang, Jr.)

Development of improved high impedance amplifier (NIMH-NP3) (A. Bak)

Studies on spreading cortical depression (NIMH-NP-4)
(W. H. Marshall)

Analysis of the electrical activity of the brain of unanesthetized
monkeys (NIMH-NP5) (J. C. Lilly)

Mapping the behavior elicitable by electrical stimulation of
the brain (NIMH-NP-6) (J. C. Lilly)

Laboratory of Neurochemistry

Structure of a complex formed between polyadenylic acid and
polyuridylic acid (NIMH-NC1) (A. Rich)

Physical chemical studies on synthetic polyribonucleotides
(NIMH-NC2) (G. Felsenfeld)

Isolation, stabilization, and fractionation of ribonucleic acids
(NIMH-NC3) (D. Bradley)

Changes in nucleic acid structure (NIMH-NC4) (G. L. Eichorn)

The effects of magnesium ion upon ribonucleic acids (NIMH-NC5)
(D. Bradley)

The structure of steroid -- amino acid complexes (NIMH-NC6)
(A. Rich)

Determination of the structure of polyadenylic acid (NIMH-NC7)
(A. Rich)

Computing methods for calculating fourier transforms (NIMH-NC8)
(D. R. Davies)

The rapid continuous measurement of regional blood flow and
metabolism in man A. Rapid continuous measurement of cerebral
blood flow and metabolism by means of radioactive krypton
B. Rapid continuous measurement of leg blood flow and metabolism
by means of radioactive sodium (NIMH-NC-9) (L. Sokoloff)

The mechanism of action of thyroxine and its relation to cerebral metabolism (NIMH-NC10) (L. Sokoloff)

Studies on the circulation and metabolism of the human brain

I - Age changes in cerebral blood flow and metabolism

II - Effects of anxiety and emotional states on cerebral circulation and metabolism

III - Physiological and pharmacological influences on the cerebral circulation and metabolism (NIMH-NC11) (L. Sokoloff)

Measurement of local circulation in the brain (NIMH-NC12) (S. S. Kety)

Metabolic changes in states of coma and mental deficiency (NIMH-NC13) (D. K. Dastur)

Laboratory of Cellular Pharmacology

The biosynthesis and physiological function of carnitine (NIMH-CP1) (G. L. Cantoni)

Biological methylations in mental disease (NIMH-CP2) (G. L. Cantoni)

Studies on the mechanism of the methionine activating enzyme (NIMH-CP3) (G. L. Cantoni)

Studies on methionine activating enzyme of yeast (NIMH-CP4) (S. H. Mudd)

Study of methionine synthesis by enzymatic transmethylation from betaine or dimethylthetin (NIMH-CP5) (J. Durell)

The metabolism of S-adenosylhomocysteine (NIMH-CP6) (G. de la Haba)

Comparison of amino acid analogue effects on the in vitro synthesis of two pancreatic proteins (NIMH-CP7) (M. Yarmolinsky)

The conversion of phenylalanine to tyrosine (NIMH-CP8) (S. Kaufman)

Studies on the hormonal regulation and mechanism of protein synthesis (NIMH-CP9) (S. Kaufman)

Addiction Research Center

Acute and chronic intoxication with drugs other than analgesics, barbiturates, and alcohol (NIMH-AR2) (H. Isbell)

Addictive liability of new analgesics (NIMH-AR3) (H. F. Fraser)

Chronic intoxication with barbiturates and alcohol (NIMH-AR4) (H. F. Fraser)

Biochemistry of addiction (NIMH-AR5) (A. J. Eisenman)

Neurophysiology and neuropharmacology of addiction (NIMH-AR6) (A. Wikler)

Psychological studies of addiction (NIMH-AR7) (E. Hill)

Laboratory of Clinical Science:

The physiological disposition and metabolic fate of drugs affecting the nervous system (NIMH-CS1) (J. Axelrod)

Biochemical factors involved in the action of drugs. I. Studies on the development of tolerance to narcotic drugs and the action of narcotic drug antagonists (NIMH-CS2) (J. Axelrod)

Cellular mechanisms in the metabolism of drugs (NIMH-CS3) (J. Axelrod)

Biochemical studies on brain, blood, and spinal fluid of encephalomyelitic animals (NIMH-CS4) (M. W. Kies)

Antidiuretic effects of LSD in normal and schizophrenic subjects (NIMH-CS5) (M. W. Kies)

Fractionation of brain constituents. Isolation and identification of antigen responsible for production of allergic encephalomyelitis (NIMH-CS6) (M. W. Kies)

Immunological studies on allergic encephalitis (NIMH-CS7) (M. W. Kies)

Studies of the neuropharmacologic effects of a series of indole alkaloids (NIMH-CS8 (C)) (E. V. Evarts, W. Marshall)

Psychopharmacological studies in man (NIMH-CS9 (C)) (E. V. Evarts)

Studies of the excitability of primary and diffuse thalamocortical projection systems (NIMH-CS10 (C)) (E. Evarts, W. H. Marshall)

A study of the effects of a variety of centrally acting drugs on intellectual, motor, and perceptual behavior in man (NIMH-CS11 (C)) (C. Kornetsky)

The effects of clinical and experimental pain on electrical skin resistance (NIMH-CS12 (C)) (C. Kornetsky)

Studies of the interrelationships of the nervous and circulatory systems (NIMH-CS13 (C)) (P. V. Cardon, Jr.)

Relationship of psychological effects of lysergic acid diethylamide and stress to cerebral blood flow and metabolism, and personality (NIMH-LCS14 (C)) (S. Perlin, C. Kornetsky, W. Pollin)

A psychodynamic study of psychiatric patients via the use of drugs (NIMH-LCS15 (C)) (R. M. Butler, S. Perlin)

Correlation of psychiatric evaluation with neurophysiological, psychological, and sociological evaluation in a group of normal aged (NIMH-LCS16 (C)) (S. Perlin, R. N. Butler)

Psychiatric evaluation of normal control volunteers (NIMH-LCS17 (C)) (W. Pollin, S. Perlin)

Effect of various pharmacologic and physiologic agents on gastric secretory activity (NIMH-LCS18 (C)) (R. K. McDonald, V. K. Weise)

The relationship of standardized life situations to various physiological and psychological functions in the rat (NIMH-CS19 (C)) (R. K. McDonald, R. Ader)

Effect of various factors on adrenal cortical activity (NIMH-CS20 (C)) (R. K. McDonald)

Laboratory of Psychology

Cytological and cytochemical changes in the nervous system as a function of age: an investigation of submicroscopic morphology employing the light and electron microscopes (NIMH-P30) (W. Bondareff)

Age changes in mental and perceptual abilities and personality structure (NIMH-P31) (J. Botwinick)

Age changes in the behaviour of the rat; spontaneous activity, speed of response, and learning and memory (NIMH-P32) (E. A. Jerome)

The metabolism of neuropharmacological agents as a function of age (NIMH-P33) (E. Streicher)

Age changes in brain electrolytes in the rat (NIMH-P34) (E. Streicher)

Metabolism of nervous tissue as a function of age (NIMH-P35) (E. Streicher)

Age changes in time and intensity relations in human perception (NIMH-P36) (A. D. Weiss)

The effects of brain lesions and immediate postoperative experience on dominance behavior in primates (NIMH-P37) (A. F. Mirsky)

Further analysis of the Continuous Performance Technique as a research tool and diagnostic device in assessing the effects of drugs and brain pathology (NIMH-P38) (A. F. Mirsky)

Defining an extrageniculostriate system in vision (NIMH-P39) (M. Mishkin)

A comparative study in primates on the effects of temporal lobe damage on visually guided behavior (NIMH-P40) (M. Mishkin)

The analysis of the relationship between emotional behavior and certain cortical and subcortical structures in the subhuman primate brain (NIMH-P41) (H. E. Rosvold)

The analysis of the relationships between problem-solving behavior as demonstrated in the delayed response and **d**iscrimination tasks and certain cortical and subcortical structures in the subhuman primate brain (NIMH-P42) (H. E. Rosvold)

Histological analysis of brain lesions in primates (NIMH-P43) (M. K. Szwarcbart)

Visual discrimination processes in the pigeon (NIMH-P44) (D. S. Blough)

Discrimination learning in normal humans (NIMH-P45) (D. S. Blough)

Environmental and genetic modification of biological systems (NIMH-P46) (J. B. Calhoun)

Test of the satiation theory of perception (NIMH-P47) (V. R. Carlson)

Electrical recording of eye movements (NIMH-P48) (V. R. Carlson)

Effects of lysergic acid diethylamide (LSD-25) on visual functions (NIMH-P49) (V. R. Carlson)

A study of the development of infants, with emphasis on mother-child interactions and infant personality variables as prognostic tools. (NIMH-P-1 (C)) (N. Bayley)

Early infant personality characteristics: studies of orality, activity, and sensitivity in neonates (NIMH-P-2 (C)) (R. Q. Bell)

A screening test for selecting parents on the basis of their attitudes toward children: relations between attitudes expressed during the lying-in period and later behavior with the one month old infant (NIMH-P-3 (C)) (R. Q. Bell)

Origins of emotional dependence in early childhood: an experimental program (NIMH-P-4 (C)) (J. L. Gewirtz)

The effects of deprivation and satiation on a social reinforcer (approval) (NIMH-P-5(C)) (J. L. Gewirtz)

The differential responsiveness of infants to familiar and unfamiliar persons (NIMH-P-6 (C)) (H. L. Rheingold)

A followup study of social responsiveness in a group of institutional babies (NIMH-P-7 (C)) (H. L. Rheingold)

The effect of social reinforcement upon social behavior in the human infant: the effects upon vocal behavior (NIMH-P-8 (C)) (H. L. Rheingold)

Relation of mother-child interaction during the first three years to intellectual and personality development of children to 21 years (NIMH-P-9 (C)) (E. S. Schaefer)

Development of maternal behavior research instrument, analysis of its structure, and investigation of consistency of mother-child interaction from 0-3 years to 10 years (NIMH-P-10 (C)) (E. S. Schaefer)

Development of an ego-integration conceptual system for studying psychotherapy (NIMH-P-11 (C)) (D. W. Goodrich, D. S. Boomer)

Staff values concerning therapeutic interventions with hyper-aggressive children (NIMH-P-12 (C)) (D. S. Boomer)

Communication of value systems between therapist and schizophrenic patients (NIMH-P-13 (C)) (B. Iflund)

Selective recall of emotionally toned stimuli in various psychiatric groups (NIMH-P-14 (C)) (B. Iflund)

Value changes in psychiatric nursing trainees (NIMH-P-15 (C)) (H. C. Kelman)

Validation of specificity theory of psychosomatic disease (NIMH-P-16 (C)) (H. C. Kelman, F. Alexander, M. Stein)

Processes of acceptance of social influence (NIMH-P-17 (C)) (H. C. Kelman)

Attitude changes in nurse trainees subsequent to psychiatric training (NIMH-P-18 (C)) (M. B. Parloff)

Nature and stability of psychiatric nurses concepts of their roles (NIMH-P-19 (C)) (M. B. Parloff)

The process of change and the communication of value systems in psychoanalytic therapy (NIMH-P-20 (C)) (M. B. Parloff, S. Perlin)

Linguistic study of emotional expression (NIMH-P-21 (C)) (A. T. Dittmann)

Judgment of facial expression from short sequences of photographs (NIMH-P-22 (C)) (A. T. Dittman)

Interaction patterns of normal and hyperaggressive children
(NIMH-P-23 (C)) (A. T. Dittmann)

The self concept and body image as related to disease susceptibility
and organ choice (NIMH-P-24 (C)) (I. V. Kendig)

Patterns of orienting, conditioning, and reaction time in process
and reactive schizophrenics (NIMH-P-25 (C)) (D. Rosenthal)

Schizophrenic illness in a set of identical quadruplets
(NIMH-P-26(C)) (D. Rosenthal)

The analysis of the psychotherapeutic process: the cumulative
information derived from repeated viewing of complex material
(NIMH-P-28 (C)) (D. Shakow)

Psychology of schizophrenia: problem of set (NIMH-P-29 (C))
(D. Shakow)

Laboratory of Socio-environmental Studies

Social and psychological factors in drug addiction among adolescents
and young adults (NIMH-S1) (J. A. Clausen)

The impact of mental illness upon the family (NIMH-S2) (J. A. Clausen,
M. R. Yarrow)

The adaption of the mental patient to his family upon return from
hospitalization (NIMH-S3) (J. A. Clausen, M. R. Yarrow)

The formation of children's peer relationships (NIMH-S4)
(M. R. Yarrow, J. D. Campbell)

Adult leadership in children's groups: a study of leader's sensitivity
and functioning in relation to the social-cultural composition of the
group (NIMH-S5) (M. R. Yarrow, J. D. Campbell)

The validity of retrospective data on parent-child relationships
(NIMH-S6) (M. R. Yarrow)

The identification of self in identical quadruplets: a special
case of the problems of sibling rivalry and of multiple status
(NIMH-S7) (O. W. Quinn)

The Mörlok family as seen by the community (NIMH-S8) (O. W. Quinn)

Life-styles in aging (NIMH-S9) (M. R. Yarrow)

A comparison of the social relationships of children in the middle and and lower socio-economic strata (NIMH-S10) (M. L. Kohn, J. A. Clausen)

Public reactions to the threat of polio in an epidemic area (NIMH-S11) (E. L. Linn, J. A. Clausen)

Exploratory study, preliminary to a study of changes in hospitalized mental patients due to treatment with chlorpromazine (NIMH-S12) (E. L. Linn)

The relationship between nurses' and aides' perceptions of given psychiatric patients and their functioning with these patients (NIMH-S13) (L. C. Deasy)

A twin family study of mental deficiency (NIMH-S14) (F. J. Kallmann, G. Allen)

Social life of the mental hospital patient (NIMH-S15 (C)) (E. Goffman)

A phenomenological study of child-patient behavior (NIMH-S16 (C)) (N. Jordon)

A study of the structure of a therapeutic milieu in a psychiatric ward--its impact on the patients and the patient's response to it (NIMH-S17 (C)) (N. Jordon)

Office of Director, Clinical Investigations

The analysis of the psychotherapeutic process, particularly the psychoanalytic process (NIMH-D1(C)) (R. A. Cohen)

Establishment of a near zero level of physical stimulation and its effects on mind and brain activity (NIMH-D4(C)) (J. C. Lilly)

Adult Psychiatry Branch

A study of clinical and experimental depersonalization (NIMH-AP-1-(C)) (C. Savage)

A study of tranquilizing drugs (NIMH-AP-2-(C)) (C. Savage)

Study and treatment of schizophrenia as a family problem (NIMH-AP-3-(C)) (M. Bowen)

Investigation of the character structure in the alcoholic patient (NIMH-AP-4-(C)) (M. Bowen)

A study of critical of influential factors affecting the usual psychotherapeutic process which relate to the particular setting of the Clinical Center of the NIH (NIMH-AP-5-(C)) (J. T. Shurley)

The study of family members in terms of their role participation in a structured setting (NIMH-AP-6-(C)) (J. M. Scher)

The 'autistic child as an adult in a structured ward setting (NIMH-AP-7-(C)) (J. M. Scher)

A study of the schizophrenic process in the context of a directed constructively structured, role-oriented ward setting (NIMH-AP-8-(C)) (J. M. Scher)

An operational study of communicative interaction in terms of language, role, and action (NIMH-AP-9-(C)) (J. M. Scher)

To compare the speech behavior of schizophrenic patients to that of brain damaged (NIMH-AP-10-(C)) (J. M. Scher, E. Weinstein)

A study of interaction patterns and physiological responses (NIMH-AP-11-(C)) (J. M. Scher, P. V. Cardon, Jr.)

Psychiatric research in a clinical setting: integrating research and treatment (NIMH-AP-12(C)) (S. E. Perry)

Selected aspects of the social structure of a clinical research program in the mental health field (NIMH-AP-13-(C)) (S. E. Perry)

The natural history of a hospital case presentation (NIMH-AP-14-(C)) (S. E. Perry)

Perceptual impairment in psychogenic mental disorder (NIMH-AP-15-(C)) (L. C. Wynne)

Social mobility and the milieu of the psychiatric hospital (NIMH-AP-16-(C)) (L. Schaffer, L. C. Deasy)

Family relationships in schizophrenia (NIMH-AP-17-(C)) (J. Day, S. Hirsch, L. Schaffer, L. C. Wynne)

Gerontology Branch

Memory functions as related to age (NIMH-G1) (M. D. Davidoff)

A study of a "watchkeeping" function with reference to age differences (NIMH-G2) (M. D. Davidoff)

A study of the effect of different types of sample controls on cross sectional studies in the psychology of aging (NIMH-G3) (M. D. Davidoff)

Biometrics Branch

Model reporting area for mental hospital statistics (NIMH-B10-1)
(M. Kramer, H. Goldstein, E. S. Pollack)

Annual census of patients in mental institutions (NIMH-B10-2)
(B. H. Kroll)

Statistical system at St. Elizabeths Hospital (NIMH-B10-3)
(E. S. Pollack)

Study of trends in crude, age-adjusted, and age-specified first admission rates to public mental hospitals by state, 1940 and 1950 (NIMH-B10-4) (R. W. Redick)

Cohort studies for state hospitals in selected model reporting area states (NIMH-B10-5) (M. Kramer, E. S. Pollack, P. H. Person)

Special studies based on census data (NIMH-B10-6) (B. H. Kroll)

Followup study of first admissions to Pacific State Hospital, Spadra, California (NIMH-B10-7) (P. H. Person, Jr.)

Correlation of patient and socio-environmental characteristics of first admissions to Warren State Hospital, Warren, Pennsylvania, 1916-1955, with the movements of such patients into and out of the hospital (NIMH-B10-8) (H. Goldstein, P. H. Person, Jr.)

Study of data on the characteristics of admissions to the Massachusetts State mental hospital system during the period 1900-1950 and the correlation of movement data on these patients with the outcome of treatment (NIMH-B10-9) (T. F. Pugh)

Annual collection of uniform national data on outpatient psychiatric clinics (NIMH-B10-10) (A. K. Bahn)

Consultation in the design and analysis of experiments (NIMH-B10-13)
(S. W. Greenhouse)

Child Research Branch

Studies of milieu therapy with hyperaggressive children (NIMH-CR-1(C))
(F. Redl, J. Noshpitz, E. Silber)

Studies in psychopathology of the hyperaggressive child (NIMH-CR-2(C))
(F. Redl, H. L. Rausch, B. Sweet, J. Noshpitz, G. Gordon, D. Kaplan, E. Silber)

Technical problems in individual psychotherapy with hyperaggressive children (NIMH-CR-3(C)) (B. Sweet, G. Gordon, H. Longley)

Studies in learning disabilities in hyperaggressive children (NIMH-CR-4(C)) (R. Newman)

Studies in life space interview techniques (NIMH-CR-5(C)) (F. Redl, H. Kitchener, J. Vernick, A. T. Dittmann, E. Silber)

Studies of change in hyperaggressive children during the course of residential treatment (NIMH-CR-6(C)) (H. L. Raush, A. T. Dittmann, D. W. Goodrich)

Research on anger in interpersonal situations (NIMH-CR-8 (C)) (D. Kaplan, D. W. Goodrich)

Research on the concept of time in hyperaggressive children (NIMH-CR-9 (C)) (B. Sweet, H. L. Raush, D. S. Boomer)

Staff values concerning therapeutic interventions with hyperaggressive children (NIMH-CR-10 (C)) (D. S. Boomer, D. W. Goodrich)

A study of behavior reporting by child care workers (NIMH-CR-11(C)) (B. Iflund, D. W. Goodrich)

NATIONAL INSTITUTE OF NEUROLOGICAL DISEASES AND BLINDNESS

Office of the Director

Collaborative study of cerebral palsy, mental retardation, and other neurological deficits of infancy and childhood (NINDB-OD-2)
(Pearce Bailey, Henry A. Imus)

Relation of adverse factors in the perinatal period in neurological and psychological deficits--monkeys (NINDB-OD-7) (C. J. Bailey)

Development of behavior and communication in the *Macaca mulatta* under free range conditions (NINDB-OD-8) (Stuart Altman)

Laboratory of Neuroanatomical Sciences

Development of intrinsic structures of the human brain (NINDB-NA-1)
(W. F. Windle)

Regeneration in the central nervous system (NINDB-NA-2)
(W. F. Windle, John O. Smart, Jane Joralemon, Elizabeth Dorrill)

Regeneration in the peripheral nervous system (NINDB-NA-3)
(Lloyd Guth)

Process of aging in the central nervous system (NINDB-NA-4)
(Harry H. Wilcox)

Study of the influence of nerves upon their end organs (NINDB-NA-5)
(Richard L. Sidman)

Study of the structure and chemistry of vertebrate photoreceptor cells (NINDB-NA-6) (Richard L. Sidman)

Induction of hypokinesia, tremor, rigidity and related phenomena in laboratory animals by means of reserpine and other drugs (NINDB-NA-7) (W. F. Windle)

Stomach factors in hunger and drive discrimination (NINDB-NA-8)
(C. J. Bailey)

Effects of anoxia at birth on brain structure and function (NINDB-NA-9) (C. J. Bailey, Marisa I. R. Ramirez de Arellano, W. F. Windle)

Ultrastructure of nervous system (NINDB-NA-10) (Sanford L. Palay)

Quantitative histochemical methods (NINDB-NA-11) (R. W. Albers)

Quantitative histochemical studies of the nervous system
(NINDB-NA-12) (R. W. Albers)

Cholinesterase activity of mammalian neurosecretory system
(NINDB-NA-13) (Milton W. Brightman)

The effect of the circulating titre of antidiuretic hormone on
the release of this hormone from the neurohypophysis (NINDB-NA-14)
(Milton W. Brightman)

Relationship between neurosecretion and milk ejection (NINDB-NA-15)
(Milton W. Brightman)

Vascular supply of the spinal cord (NINDB-NA-16) (Milton W. Brightman)

X-irradiation of the hypothalamus (NINDB-NA-17) (Milton W. Brightman)

Pathogenetical factors in the development of myelopathies
(NINDB-NA-18) (Jan Cammermeyer)

Factors involved in the formation of cerebral hemorrhages
(NINDB-NA-19) (Jan Cammermeyer)

Distribution of fat outside the dura of the spinal cord in mammals
(NINDB-NA-20) (Helen Ramsey)

The classification of changes in patients suffering from Refsum's
syndrome (NINDB-NA-21) (Jan Cammermeyer)

A further study of the auditory afferent and efferent (Feed-back)
systems including the autonomic innervation of the inner ear
(NINDB-NA-22) (Grant L. Rasmussen)

The precise termination of certain tracts and associated connections
of the brain stem and spinal cord (NINDB-NA-23) (Grant L. Rasmussen,
Leo C. Massopust)

An anatomico-physiologic study of ascending and descending visceral
efferent connections of the brain and spinal cord (NINDB-NA-24)
(L. C. Massopust, Jr., G. L. Rasmussen)

The role of the hypothalamus and other areas of the brain stem on
temperature regulation (NINDB-NA-25) (L. C. Massopust, Jr.)

Origin and termination of the frontopontine tract (NINDB-NA-26)
(Grant L. Rasmussen)

Laboratory of Neurophysiology

Analysis of impulse transmission in the squid giant synapse
(NINDB-NP1) (I. Tasaki)

Investigation of the function of the cochlea (NINDB-NP2)
(Ichiji Tasaki)

Analysis of the mechanism of action potential production in
the nerve fiber (NINDB-NP3) (I. Tasaki)

Experimental studies on nervous conduction along branching
fibers (NINDB-NP4) (Constantine S. Spyropoulos)

Investigation of the effects of changes in temperature and
pressure upon nervous activity (NINDB-NP5) (Constantine S.
Spyropoulos)

Investigation of the electrical activity of the cardiac
muscle (NINDB-NP6) (Constantine S. Spyropoulos)

Origin of rhythmic activity in the spinal cord (NINDB-NP7)
(K. Frank, M. G. F. Fuortes)

Mechanisms of interaction between neurons in the spinal cord
(NINDB-NP8) (K. Frank, M. G. F. Fuortes)

Laboratory of Neurochemistry

Biosynthesis of complex cerebral lipids (NINDB-NC1)
(Roscoe Brady)

Microdetermination of enzymatic decarboxylation in selected
samples of brain tissue (NINDB-NC2) (Roscoe Brady)

Intra-axonal injection of enzymes and co-factors (NINDB-NC3)
(Roscoe Brady)

Effect of lysergic acid diethylamide on enzymatic reactions
(NINDB-NC4) (Roscoe Brady)

Biosynthesis of cerebroside (NINDB-NC5) (Roscoe Brady)

The relationship of nucleotides to lipid synthesis (NINDB-NC6)
(Robert M. Burton)

Toxicity of neurophysiologically active chemicals (NINDB-NC7)
(Robert M. Burton)

Metabolism of inositol (NINDB-NC8) (B. W. Agranoff)

Biochemistry of neuraminic acid (NINDB-NC9) (B. W. Agranoff)

Metabolism of meprobamate (NINDB-NC10) (B. W. Agranoff)

Metabolism of derivatives of coenzyme A (NINDB-NC11)
(Roscoe Brady)

Biosynthesis of fatty acids (NINDB-NC12) (Roscoe Brady)

Laboratory of Biophysics

Ionic permeabilities of the squid giant axon membrane
(NINDB-B-1) (J. W. Moore, K. S. Cole)

Ionic permeabilities of nerve membranes -- theoretical
investigations (NINDB-B-2) (K. S. Cole, R. FitzHugh)

Correlation of acetylcholinesterase inhibition spectrum with
nerve action (NINDB-B-3) (J. W. Moore)

Membrane potentials of a lobster giant axon (NINDB-B-4)
(J. C. Dalton)

Ionic permeabilities of nodal membrane (NINDB-B-5) (K. S. Cole)

Medical Neurology Branch

Physiology and pharmacology in myasthenia gravis (NINDB 83C)
(G. Milton Shy)

Histopathological investigations of neuromuscular disorders
(NINDB 89C) (G. Milton Shy, Theodor Wanko)

Neurochemical studies on patients with phenylketonuria and
galactosemia (NINDB 90C) (Anatole S. Dekaban, Donald B. Tower)

The cerebral circulation in minor seizures and the effects of
hyperventilation thereon (NINDB 91C) (Louis Sokoloff,
Donald B. Tower)

Characteristics of isocitric dehydrogenase and other Krebs
cycle enzymes in cell fractions of cerebral and hepatic
tissue (NINDB 92C) (James A. Shepherd)

A study of abnormal urinary metabolites excreted by patients
with seizures, cerebellar ataxia and other neurological
diseases (NINDB 93C) (W. King Engel)

Quantitative, microchemical determination of acetylcholine in
biological specimens (NINDB 94C) (William C. Curtis,
Donald B. Tower)

The nature and characterization of urinary polypeptides, pyrogens and similar molecules (NINDB 95C) (William C. Curtis)

Physico-chemical studies of human cerebrospinal fluid proteins in demyelinating diseases (NINDB 96C) (William C. Curtis)

Metabolism of glutamic and aspartic acid amides in vivo (NINDB 97C) (William C. Curtis, Donald B. Tower)

Clinical evaluation of the value of glutamine and asparagine for the clinical control of seizures (NINDB 98C) (Donald B. Tower)

Investigation of Vitamin B₁₂ levels in cerebrospinal fluid (NINDB 99C) (Charles E. Wells)

Comparative biochemistry of smooth muscle and striated muscle actomyosin (NINDB 100C)

Alterations of actomyosin tensile strength and characterization of muscle proteins in neuromuscular disease (NINDB 101C) (Beni Horvath)

Electrolyte metabolism and energy metabolism in normal and epileptogenic cerebral cortex (NINDB 102C) (Donald B. Tower)

Glutamine and glutamic acid metabolism in normal and epileptogenic cerebral cortex (NINDB 103C) (Donald B. Tower)

Neuromuscular blocking agents: Central nervous system effects (NINDB 104C) (Richard L. Irwin)

Neuromuscular blocking compounds: Peripheral and respiratory action related to calcium, potassium, magnesium, carbon dioxide and anesthetic gases (NINDB 105C) (Richard L. Irwin)

Search for a circulating neuromuscular blocking substance as a causative agent in myasthenia gravis (NINDB 106C) (Peter T. Rowley)

Blood and tissue cholinesterases in neuromuscular blockade (NINDB 107C) (Richard L. Irwin)

The development of a "myasthenic" animal for testing purposes (NINDB 108C) (Richard L. Irwin)

Study of new chemical compounds with central nervous system effects (NINDB 109C) (Richard L. Irwin)

The action of drugs on directly stimulated innervated and denervated muscle (NINDB 110C) (Richard L. Irwin)

Investigation, localization cerebral neoplasia by isotopic detection (NINDB 111C) (G. Milton Shy, Robert Bradley)

Protein studies in neuromuscular diseases and hereditary ataxia (NINDB 112C) (G. Milton Shy)

Surgical Neurology Branch

The effect of lesions of the optic pathways upon the geniculate body (NINDB 33C) (J. M. Van Buren)

Studies of involuntary movements (NINDB 34C) (Maitland Baldwin)

Visual field deficits following temporal lobectomy (NINDB 35C) (J. M. Van Buren)

Pain mechanisms (NINDB 36C) (J. M. Van Buren)

Effect of tumors upon central nervous system function and structure (NINDB 37C) (John M. Van Buren)

Study of the adult human retinal cytology using Golgi and chromatic methods (NINDB 38C) (J. M. Van Buren)

The effect of lesions of the optic pathways upon the retina (NINDB 39C) (J. M. Van Buren)

The histological investigation of a case of retinal moniliiasis (NINDB 40C) (J. M. Van Buren)

Human cortical physiology (NINDB 41C) (Maitland Baldwin)

Epileptogenic mechanisms in the brain of man (NINDB 42C) (Maitland Baldwin)

Hypothermia in intracranial surgery (NINDB 43C) (Maitland Baldwin)

Mechanisms of memory (NINDB 44C) (Maitland Baldwin)

An investigation of speech function localized in the temporal areas of man (NINDB 45C) (Maitland Baldwin)

Activity of cortical nerve cells (NINDB 46C) (Choh-luh Li)

Study of neuronal humoral transmission (NINDB 47C) (Choh-luh Li)

Nerve-muscle activity in reference to temperature changes (NINDB 48C) (Choh-luh Li)

Epileptic discharge of the amygdaloid complex (NINDB 49C) (Choh-luh Li)

Origin of fibrillation potentials in denervated mammalian muscle fibers (NINDB 50C) (Choh-luh Li)

Remote stimulation and recordings of the electrical activity of the nervous system (NINDB 51C) (Choh-luh Li)

Investigation of second sensory areas in man (NINDB 52C)
(J. M. Van Buren)

A histological study of papilledema (NINDB 53C) (J. M. Van Buren)

A vestibular representation in the temporal lobe (NINDB 54C)
(J. M. Van Buren)

A study of functional representation in the amygdala of man and the higher primates (NINDB 55C) (Maitland Baldwin)

An investigation of the autonomic phenomena which follow stimulation of the temporal areas in man and higher primates (NINDB 56C) (Maitland Baldwin)

Study of the blood-brainbarrier in brain injury produced by cold (NINDB 57C) (Igor Klatzo)

Studies on localization of muscle proteins (NINDB 58C) (Igor Klatzo)

Special pathology of epileptogenic tissue. (A) Histochemical and histological investigations of human epileptogenic tissue (NINDB 59C)
(John Van Buren)

Special pathology of epileptogenic tissue. (B) Histochemical studies in experimental epilepsy (NINDB 60C) (Igor Klatzo)

Special pathology of epileptogenic tissue. (C) Tissue culture studies (NINDB 61C) (Igor Klatzo)

The Investigation of the site and the extent of lesions involving CNS in cerebral palsy and allied conditions (NINDB 62C)
(Anatole S. Dekaban)

Maternal condition during pregnancy and the course of birth in relation to neurological abnormalities in the infants (NINDB 63C)
(Anatole S. Dekaban)

Experimental production of congenital malformations of the CNS (NINDB 64C) (Anatole S. Dekaban)

Preparation of the horizons of the normal development of the major structures of the CNS in mice (NINDB 65C) (Anatole S. Dekaban)

Pathological study of microgyria (NINDB 66C) (Anatole S. Dekaban)

Measurements of external and internal orbital distance as well as interpupillary distance in children up to 6 years of age (NINDB 67C) (Anatole S. Dekaban)

Pathological studies of the aborted embryos (NINDB 68C) (A. S. Dekaban)

The function of the temporal lobe in the recording of experiences (NINDB 69C) (L. L. Frost)

Personality characteristics of temporal lobe epileptics (NINDB 70C) (L. L. Frost)

Speech areas in man (NINDB 71C) (L. L. Frost)

The role of the temporal lobe in perception (NINDB 72C) (L. L. Frost)

Intellectual and social evaluation of severely mentally retarded cerebral palsied individuals (NINDB 73C) (L. L. Frost)

Intellectual status with drug change in the cerebral palsied child (NINDB 74C) (L. L. Frost)

Respiratory patterns (NINDB 75C) (K. D. Hall)

Central control of autonomic functions (NINDB 76C) (K. D. Hall)

The analgesic state (NINDB 77C) (K. D. Hall)

Ophthalmology Branch

Evaluation of steroid therapy in uveitis (NINDB 1C) (J. F. O'Rourke)

Study on the pharmacodynamics of various agents affecting intraocular pressure (NINDB 2C) (L. von Sallmann, J. F. Macri)

A study of the proteins of the lens (NINDB 3C) (R. A. Resnik)

The chemistry of alloxan (NINDB 4C) (R. A. Resnik)

A study of the nucleic acids of the lens (NINDB 5C) (R. A. Resnik)

The diagnosis and treatment of ocular toxoplasmosis (NINDB 6C) (G. R. O'Connor)

Study of viruses affecting the eye (NINDB 7C) (Chie Tanaka)

Studies on central nervous system control of intraocular pressure (NINDB 8C) (L. von Sallmann, J. F. Macri)

Detection of ocular tumor by isotope methods (NINDB 9C)
(J. F. O'Rourke)

Effects of muscle relaxants on intraocular pressure and
extraocular striate muscles (NINDB 10C) (F. J. Macri,
M. G. F. Fuortes)

Electro-physiology of the retina (NINDB 11C) (M. G. F. Fuortes)

Design and construction of ophthalmic instruments (NINDB 12C)
(R. D. Gunkel)

Automatic intensity control in testing dark adaptation
(NINDB 13C) (R. D. Gunkel)

Electron microscope studies on the epithelium of the lens,
the ciliary body and the optic nerve (NINDB 14C) (T. Wanko)

Physiologic studies of the human electroretinogram in response
to intermittent light stimuli (NINDB 15C) (G. Goodman)

Quantitative studies of the human electroretinogram in
response to single light stimuli (NINDB 16C) (H. Bornschein)

Evaluation of electroretinography as a useful clinical tool
(NINDB 17C) (G. Iser)

The effect of rate of rise of photic stimuli on the human
electroretinogram (NINDB 18C) (H. Bornschein)

Studies on diet and drug induced experimental cataract
(NINDB 19C) (L. von Sallmann)

Study on the innervation of the anterior chamber angle
(NINDB 20C) (M. G. Holland)

Study of submicroscopic structures of lens and corneal cells
by phase contrast microscopy (NINDB 21C) (L. von Sallmann,
S. Aronson)

Effects of ionizing radiations on the lens of various species
(NINDB 22C) (L. von Sallmann, L. Caravaggio)

Electroencephalography Branch

Temporal lobe epilepsy, electrographic study (NINDB 78C)
(Cosimo Ajmone Marsan)

Electrocorticography in focal epilepsy (NINDB 79C)
(Cosimo Ajmone Marsan)

The epileptic seizure. Its functional morphology and diagnostic significance (NINDB 80C) (C. A. Marsan, B. L. Ralston)

Implanted electrodes in humans. Depth recording and stimulation in epileptic patients (NINDB 81C) (C. A. Marsan)

Electroencephalographic study and cerebral blood flow in old age (NINDB 82C) (W. D. Obrist)

Electroencephalographic and neurological changes associated with 6-Azauracil administration (NINDB 83C) (C. E. Wells, C. A. Marsan)

Continuous performance test in epileptics (NINDB 84C) (A. F. Mirsky)

Experimental epilepsy. Electrographic studies in experimentally produced epileptogenic lesions in cortical and subcortical structures (NINDB 85C) (B. L. Ralston)

Thalamic control of certain normal and abnormal cortical rhythms (NINDB 86C) (B. L. Ralston)

Effect of temperature on the mammalian neuromuscular function (NINDB 87C) (P. O. Chatfield, A. Doudoumopoulos)

Epidemiology Branch

Cytology of gastric mucosa and other studies among amyotrophic lateral sclerosis patients (NINDB 23C) (G. A. Drager)

Study of natural history of multiple sclerosis (NINDB 24C) (B. Nagler)

Multiple sclerosis in Duxbury, Massachusetts (NINDB 25C) (W. Deacon)

Epidemiologic survey of selected neurologic, myopathic and ophthalmologic disorders. A. Charleston, South Carolina project (NINDB 26C) (O. R. Talbert)

Amyotrophic lateral sclerosis, other neurological disorders and congenital anomalies in the Mariana Islands (NINDB 27C) (S. J. L. Pieper, Jr.)

Multiple sclerosis and a few selected neurological diseases:
1. A preliminary study of various communities in Japan as to their suitability for future surveys (NINDB 28C) (Yoshigoro Kuroiwa, Shigeo Okinaka)

Glaucoma statistics for a small urban community; a pilot study (NINDB 29C) (L. T. Kurland)

The frequency of selected neurologic and myopathic disorders
in a small urban community (NINDB 30C) (L. T. Kurland)

Congenital anomalies in motor system disease (NINDB 31C)
(L. T. Kurland)

Investigation of amyotrophic lateral sclerosis, epidemiologic:
amyotrophic lateral sclerosis among Chamorros of California
(NINDB 32C) (L. T. Kurland)

DIVISION OF BIOLOGICS STANDARDS

Office of the Director

Biometrics research (DBS-2) (M. Halperin)

Laboratory of Viral Products

Tissue culture safety test for poliomyelitis vaccine (DBS-11)
(G. Hottle)

Monkey safety test for poliomyelitis vaccine (DBS-12) (G. Hottle)

Experimental studies with poliovirus (DBS-13) (S. Baron)

(a) Functions associated with the polio vaccine safety test in tissue culture and (b) Polio virus serology laboratory of DBS (DBS-14) (S. Baron)

Respiratory diseases (DBS-15) (B. E. Eddy)

(a) Applications of complement fixation to poliomyelitis vaccine study, and (b) Growth of vaccinia virus in bovine and simian cell cultures; potentialities of tissue culture for production and testing of smallpox vaccine (DBS-16) (J. Warren)

Physical and chemical characterization of animal viruses (DBS-17)
(C. W. Hiatt)

(a) Studies on variation in virulence of poliovirus and (b) Classification of simian and other viruses (DBS-18) (C. P. Li)

Study of measles virus and its transmission to experimental animals (DBS-19) (M. N. Dreguss)

Laboratory of Blood and Blood Products

Study of methods, **preparations**, equipment, testing, and sterilization employed in the production and utilizing of blood and blood products (DBS-7) (J. T. Tripp, P. J. Schmidt)

Laboratory of Bacterial Products

(a) Components of diphtheria toxin (b) **evaluation** of diphtheria toxoids, using chicks and (c) classification of the neisseria (DBS-8) (S. Branham (Matthews))

(a) Pertussis vaccine - control, immune response and mouse histamine sensitizing factor, (b) biologics contamination, and (c) classification of the genus haemophilus (DBS-9) (M. Pittman)

Research on viruses in relation to cancer (DBS-10) (L. Kilham)

Laboratory of Control Activities

Control tests on biologics (DBS-4) (R. Kolb)

Control of purity and safety of certain biological products as determined by progen test, and total solids, and the stability as influenced by residual moisture (DBS-5) (T. Probey)

Preparation, standardization and distribution of biological standards (DBS-6) (W. G. Workman)

